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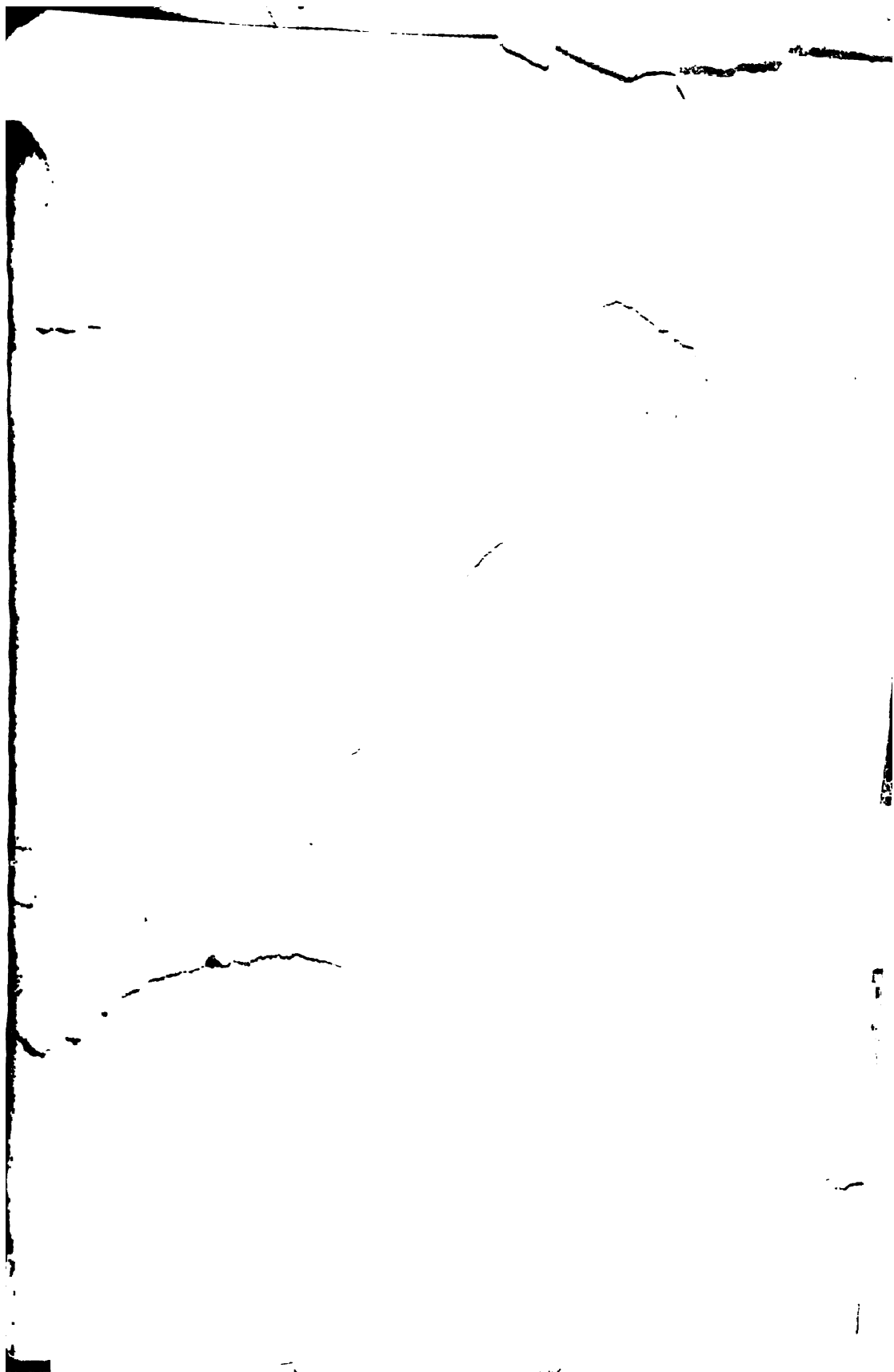
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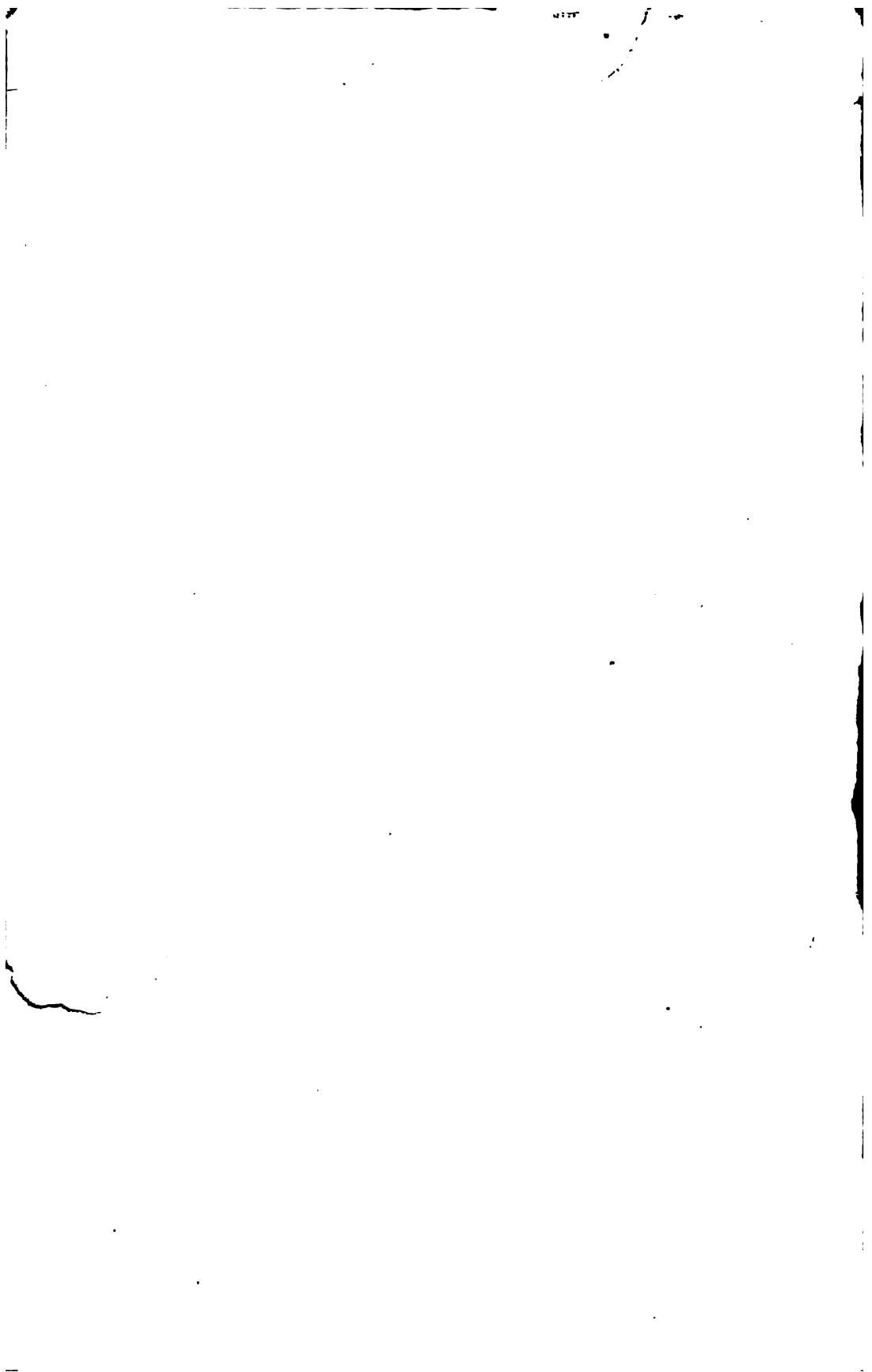
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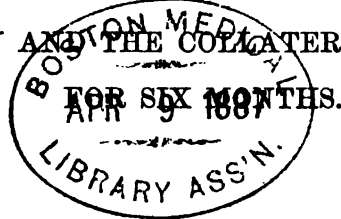
OF

MEDICAL SCIENCE:

A SYNOPSIS

OF

THE AMERICAN AND FOREIGN LITERATURE OF MEDICINE,
SURGERY AND THE COLLATERAL SCIENCES,



EDITED BY

S. W. BUTLER, M.D., AND D. G. BRINTON, M.D.

PART I.

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PHILADELPHIA:

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P R E F A C E.

WE have been induced to offer the present volume to the medical profession of America, by the conviction that hitherto there has been no similar work in the language which embraced the whole field of professional literature, nor any which was written with that practicality and conciseness which best suit the American physician. Without drawing comparisons, which in us would be out of place, we would call the attention of the reader to the fact that the "HALF-YEARLY COMPENDIUM" includes the departments of Comparative Anatomy, History of Medicine, Dentistry, Veterinary Medicine, etc., none of them touched upon in any similar work in our tongue, and embraces nearly four hundred separate articles drawn from all sources, both American and Foreign. While the principal medical journals throughout Europe have been laid under contribution, we have directed particular attention to those of our own country, which as a rule, are entirely neglected in the semi-annual English periodicals.

The manner in which the work has been done we leave others to judge. Though unforeseen delays in procuring foreign exchanges have left certain lacunæ in our plan, much to our regret, yet our corps of collaborators have done their work so well on the material at hand, that we venture to predict that no important fact or discovery in medical science will be found to have escaped their attention. Among these collaborators, we take pleasure in mentioning Drs. L. ELSBERG, S. R. PERCY, D. B. ST. JOHN ROOSA, R. E. VAN GIESON, of New York City, and Drs. S. W. GROSS, J. E. GARRETSON, GEORGE H. NAPHEYS, A. PAUL TURNER, W. M. TURNER, J. F. KÖRPER, and C. F. J. LEHLBACH, whose names are a guarantee of the character of the work, and whose assistance has been to us of the greatest value.

The encouragement we have received from all quarters of the country leaves us under no apprehension of the success of our undertaking, if it merits success, and that it always shall, no pains will be spared to insure.

We ask all members of the profession who publish monographs or special studies, on any branch of medical science, to forward them to us for notice; and all medical societies to send us copies of their transactions either in print or manuscript.

S. W. BUTLER, M.D.,
D. G. BRINTON, M.D.,
Editors.

PHILADELPHIA, January 15th, 1868.

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ANATOMY AND PHYSIOLOGY.

[COMPARATIVE ANATOMY AND ZOOLOGY; GENERAL AND SPECIAL HUMAN ANATOMY; GENERAL AND SPECIAL PHYSIOLOGY; EMBRYOLOGY; PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.]

Results of Autopsies made at the Institute for Pathological Anatomy in Prague.

Dr. A. WRANY publishes in Nos. 93 and 94 of the *Vierteljahrsschrift für die Praktische Heilkunde* a most complete and valuable statistic summary of the autopsies made at the above-mentioned institute. The author does not content himself with merely giving dry details of the morbid changes found in the various organs, but succinctly connects with them a brief survey of all the morbid lesions having any relation to the general pathologic result. These papers are so admirably condensed in the original, that an abstract would scarcely do them justice; we compress, therefore, the more common and less important material, and give in full such portions as will be found of more general interest, especially those relating to the circulatory and nervous systems.

The whole number of autopsies made was 448, according to age and sex as follows :

Age, . .	Under 1.	1 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100
Male, . .	23	3	14	44	33	43	39	25	18	2	0
Female, .	15	2	11	55	38	35	16	15	11	5	1

The most common cause of death was as usual *Tuberculosis*, which occurred in 135 cases, or 30.1 per cent. The subjoined scale shows the seat of the tubercular deposit :

Locality of Deposit.	Times.	Per cent.	Locality of Deposit.	Times.	Per cent.
Lungs,	132	97.7	Meninges,	9	6.6
Intestines,	52	38.5	Lymphatic Glands,	8	5.8
Larynx,	20	14.8	Trachea,	6	4.4
Kidneys,	16	11.8	Brain,	5	3.7
Bones,	12	8.8	Pericardium,	4	2.9
Peritoneum,	12	8.8	Genitals,	2	1.4
Spleen,	12	8.8	Supra-renal Capsules,	1	0.8
Liver,	10	7.4	Stomach,	1	0.8
Pleura,	9	6.6			

The tubercular deposit in the supra-renal capsules was associated with deposits in the intestines and lungs. There was in this case no marked discoloration of the skin.

Cancer was noticed in 37 cases, according to age and sex as follows :

Age,	15.	30.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 76.
Male,	1	1	2	4	4	1	4	2	3	1
Female,	0	0	2	6	1	1	0	1	3	0

The cancerous deposit was found in various organs, as follows :

Locality of Deposit.	Times.		Locality of Deposit.	Times.	
	Male.	Female.		Male.	Female.
Stomach,	15	2	Dura Mater,	2	0
Lymphatic Glands,	11	5	Spleen,	1	1
Liver,	8	6	Pancreas,	2	0
Peritoneum,	4	4	Ovary,	—	2
Uterus,	—	5	Fallopian Tubes,	—	2
Bones,	3	2	Brain,	1	—
Lungs,	3	2	Bulb of the Eye,	1	—
Kidneys,	4	1	Thymus Gland,	—	1
Intestines,	5	—	Vagina,	—	1
Pleura,	2	1	Under-lip,	1	—
Bladder,	—	3			

The cases of carcinoma of the stomach occurred between the fortieth and seventy-sixth years of life. It appeared 7 times in the pylorus, 4 times in the posterior wall and lesser curvature, twice in the cardiac portion. In 1 case it formed a number of separate tumors, near the pylorus. In 1 case the stomach was converted into a capsule not much larger than the fist.

In 2 cases the deposit was medullary, in 3 villous, in 5 scirrhus, and in the remaining cases fibro-medullary.

Primary cancer of the bone occurred in 2 cases. In a boy 15 years old it appeared in the ilium as a large medullary tumor of about the size of a man's head. It extended upward as far as the third lumbar vertebra, and was covered posteriorly by the gluteal muscles. The growth extended into the pelvic cavity, and in its way outward had broken through the acetabulum. The femur was considerably enlarged at its upper fourth, and just below this point fractured. The lymphatic glands of the pelvis were enlarged to the size of walnuts. The vena cava was penetrated by medullary growths. The veins of the pelvis were filled with thrombi. A cancerous growth proceeding from the dura mater had penetrated the calvaria. There were numerous carcinomatous nodules in the lungs. As direct results of the deposit, there were also found dilatation of both ureters from compression, interstitial nephritis, hydrorrhœa of the small intestines, follicular dysentery of the large intestine, and œdema of the extremities. The second case occurred in a

female, æt. 40. The sternal region and the head of the humerus were occupied by medullary tumor of about the size of a child's head, and the right ilium broken through by a deposit about as large as the fist. The dorsal vertebræ were infiltrated with cancerous matter, and curved at their middle portion; the dura spinalis was fused at this point with the corresponding vertebræ.

Medullary cancer of the right bulbus oculi occurred in one case in a man 45 years of age. At the base of the skull, partially imbedded in the bones, there was a medullary lump of about the size of a lemon, extending from the orbit inward. The right hemisphere was the seat of yellow softening. On the upper portion of the dura mater, at the left side, there was a medullary nodule of about the size of a walnut. The glands of the pelvis were conglomerated into a mass as large as the head, quite vascular, and adherent to the bladder. Small individual tumors were found in the retro-peritoneum and under the skin of the right inguinal region. The ureters were dilated from compression, and the kidneys and lungs cedematous.

Typhus was observed in 15 cases, with regard to age and sex as follows:

Age, . . .	Under 10.	10 to 20.	20 to 30.	30 to 40.
Male, . . .	—	4	3	2
Female, . . .	1	—	5	—

4 patients died during the stage of infiltration; 2 in the stage of mortification (nekrose); 2 in the stage of cicatrization; and the remainder during the stage of ulceration. The course of the complications will be comprehended from the following table:

Consentaneous localization in the large intestines,	1	Hypostasis of the lungs,	3
Intestinal hemorrhage,	2	Lobular infiltration of the inferior lobes,	6
Perforation of peritoneum,	1	Circumscribed gangrene of the lungs,	3
Ulceration of the larynx,	5	Fatty degeneration of the heart,	2
Noma of the cheek,	2	Suppuration of the mesenteric glands,	2
Decubitus,	3	Morbus Brightii,	3
Pleural exudation,	3	Ascites,	1
		Pigmentary deposit in all the organs,	1

Among the DISEASES OF THE NERVOUS SYSTEM AND ITS MEMBRANES are to be noted two cases of *pachymeningitis interna cerebialis* following caries of the petrous portion of the temporal bone, occurring in a male æt. 24, and a female æt. 32. Two cases of *psammous* dura mater in a male æt. 67, and in a female æt. 22.

Meningitis cerebialis was observed chiefly in children. In 38 bodies examined, meningitis was found 22 times, according to age and sex as follows:

Age, . . .	10 days.	10 to 20 days.	20 to 30 days.	1 to 2 months.	3½ months.
Male, . . .	1	11	3	3	—
Female, . . .	1	1	—	1	1

In 5 cases it was limited to the base of the brain. In 17 cases it was general, and in 7 cases combined with acute internal hydrocephalus.

Cerebral meningitis was observed in adults 6 times, as follows: In an insane patient as meningitis basilaris, with acute hydrocephalus and hyperæmia of the lungs; in a man

aged 42, as general meningitis, with acute morbus Brightii; in a man aged 46, with purulent exudation in both pleuritic cavities; in a woman aged 45, with disease of mitral valves, vegetations on the aortic valves, and chronic morbus Brightii; in a woman aged 46, as meningitis basilaris, from caries of the petrous portion of the temporal bone; in a man aged 80, with acute hydrocephalus, catarrh of the bladder, and enlargement of the prostate; and, finally, in a syphilitic patient aged 39, in consequence of caries of the cribriform plate of the ethmoid bone and sella turcica, with *suppuration of the pituitary gland*.

Cerebro-spinal meningitis was observed only once complicated with oedema of the lungs and intestinal catarrh.

Inter-meningeal apoplexy was observed 7 times, as follows: In a woman 72 years of age, with cancer of the liver; in a woman aged 80, with cancer of the ductus communis choledochus associated with intense icterus; in a woman aged 75, with cerebral atrophy; in a woman aged 64, with tuberculous deposit in the cervical vertebræ and thrombus of the right vertebral artery; in a man aged 42, with acute tuberculosis of the lungs and larynx; in a woman aged 56, with vegetations on the valves; and, finally, in a woman aged 32, with endo- and myocarditis, encephalitis, infarctus of the lungs, spleen, and kidneys.

Cerebral atrophy was observed 36 times, according to age and sex as follows:

Age, . . .	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.
Male, . . .	1	2	3	3	7	3	5
Female, . . .	1	1	1	3	4	—	2

It was attended with Tuberculosis, . . .	10 times.	It was attended with Cardiac disease, . . .	1 time.
" " " Uræmia, . . .	6 "	" " " Dysentery, . . .	1 "
" " " Encephalitis, . . .	3 "	" " " Cancer, . . .	5 times.
" " " Syphilis, . . .	1 time.	" " " Marasmus, . . .	5 "
" " " Myelitis, . . .	1 "		

Apoplectic spots were noticed in a man aged 40, with insufficiency of mitral valves, in the posterior portion of the left hemisphere; in a man aged 65, as an expansion of about the size of an orange in the left ventricle, with great rigidity of the vessels; and in a woman aged 72, with spots of softening in the right thalamus opticus.

Capillary apoplexy was noticed in the left hemisphere, in a man aged 20, dying from typhus; and in the cerebellum, in a man aged 23, with fatty degeneration of the heart.

Partial sclerosis of the brain was observed in a girl 17 years old, dying from tuberculosis, with chronic hydrocephalus and exostosis of the skull, and in a patient with constitutional syphilis.

Compression of the medulla, resulting from caries of the vertebræ, was observed 6 times.

Of pathological conditions in the organs of sense, the following cases are noteworthy: A case of *mollities cornearum* in a girl aged 18, accompanied rachitic exostosis of the bones of the skull, partial sclerosis of the brain-substance, and acute tuberculosis; a case of *atrophy of the optic nerve*, resulting from psammous dura; two cases of *retinitis*, connected with morbus Brightii.

With regard to the **ORGANS OF RESPIRATION**, there were observed 15 cases of *croup of the larynx*, according to age and sex as follows:

Age, . . .	Under 1.	1 to 2.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.
Male,	3	1	1	1	1	1	—	—
Female,	2	—	2	2	—	—	—	1

These cases were complicated with croup of the trachea 4 times, with croup of the pharynx 13 times. 4 cases occurred in puerperal women; 2 in connection with constitutional syphilis, 2 with morbus Brightii, 2 with pneumonia, 4 with meningitis of infants, and 1 with cancer of the rectum.

Pleuritic exudations were noticed in 92 cases, according to age and sex as follows :

Age, . . .	Under 1.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.
Male,	4	3	9	5	10	6	5	2
Female,	—	4	16	16	4	3	2	3

The exudation was fibrous in 22 cases; in 57 cases on both sides; in 35 on one side only; in 13 cases the effusion was purulent; in 1 case hemorrhagic, and in the remaining cases fibro-serous. In 17 cases the exudations were connected with the puerperal process; in 12 with tuberculosis; in 6 with carcinoma; in 3 with typhus; in 5 with uræmia; in 46 with pneumonia; in 6 with heart disease.

PNEUMONIA was observed in 129 cases, according to age and sex as follows :

Age,		Under 1.	1 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.
Male, .	{ Lobar,	1	1	1	—	6	5	4	3	3	1
	{ Lobular,	3	—	2	7	7	4	8	7	1	—
	{ Metastatic, . . .	—	—	1	2	1	—	—	—	—	—
Female,	{ Lobar,	—	1	—	4	5	4	2	1	1	1
	{ Lobular,	4	—	2	5	6	6	2	4	3	—
	{ Metastatic, . . .	—	—	1	7	1	1	—	—	—	—

The *lobar pneumonia* was croupous in 33 cases, regressive in 3, suppurative in 4, and gangrenous in 4 cases. In 20 cases it was connected with exudation in the pleuritic cavity; in 4 with meningitis; and in 2 with parotitis.

With the *lobular pneumonia* there was exudation in the pleura 35 times; 18 times it was hypostatic, 10 times catarrhal.

Abscess of the lungs was observed 5 times. It was not connected with any very interesting lesions.

Induration from *chronic pneumonia* was noted 7 times.

Gangrene of the *lungs* was observed in 13 cases. In 4 cases connected with lobar pneumonia; in 3 with typhus; in 1 with tubercular abscess; in 1 from suppuration of medullary cancer of the lung; in 1 from pneumothorax; and the remainder in connection with metastatic abscesses.

Among the DISEASES OF THE ORGANS OF CIRCULATION are to be noted 19 cases of recent *pericardial exudation*, occurring according to age and sex as follows :

Age, . . .	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.
Male, . . .	—	4	—	4	3	1
Female, . .	1	1	2	1	1	1

These cases were connected, for the most part, with inflammation of the lungs and pleura, morbus Brightii, hypertrophy, and cancerous disease.

Complete adhesion of the pericardium to the heart was observed 4 times.

Deposit of false membrane upon the surface of the heart was noticed 9 times.

Hypertrophy of the heart was observed in 65 cases, according to age and sex as follows :

Age, . . .	19.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.
Male, . . .	1	5	3	7	13	4	4
Female, . .	—	2	6	8	7	3	2

The hypertrophy preponderated in the right heart in 22 cases; in the left in 15 cases; and affected the whole heart in 28 cases. The cause in 14 cases was evidently valvular disease; in the remaining cases the causes could not be clearly ascertained; it was mostly connected with remains of pericarditis and disease of the lungs and pleura.

Valvular disease was noticed in 21 cases, according to age and sex as follows :

Age, . . .	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.
Male, . . .	1	1	2	2	—	1
Female, . .	1	5	5	2	1	—

The valves most frequently affected were the mitral and aortic. Of very great interest was a case of constriction of the right auriculo-ventricular orifice occurring in a man 58 years of age, who had been cyanotic from childhood. The tricuspid valve has formed adhesions in such a manner that only two small openings remain between their curtains and the points of attachment. The heart is hypertrophied, and the foramen ovale open. The pulmonary artery is supplied with only two semilunar valves. The case was complicated with disease of the lungs and morbus Brightii.

Cases of *recent endocarditis* were noticed in 23 cases. In 8 cases old valvular disease was present; the remainder was associated with various diseases. As congenital anomalies there were noticed a case having only two pulmonary valves, and another having only two aortic valves. Omitting the interesting lesions found in the arteries, intestines, and their coverings, we pass to the urinary organs.

Interstitial nephritis was observed in 19 cases, according to age and sex as follows :

Age, . . .	15.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.
Male, . . .	1	1	1	—	3	2	—	1
Female, . .	—	4	3	2	1	—	—	—

6 of these cases were found in puerperal women; 2 were connected with cancer, and the remainder with various diseases.

Morbus Brightii was noticed in 97 cases, according to age and sex as follows :

Age, . . .	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.
Male, . . .	2	4	5	9	15	5	4
Female, . .	4	16	15	9	3	6	—

PER CENT.

Male, . . .	2.0	4.1	5.1	9.2	15.4	5.1	4.1
Female, . .	4.1	16.4	15.4	9.2	3.0	6.1	—

The greater percentage of *women during the child-bearing period* is here rendered apparent; a fact cited by Roberts as going to prove that pregnancy may be considered as one of the direct causes of renal degeneration.

In 33 of these cases the disease was of the acute form; in 64 chronic.

The *acute form* was noticed 16 times in puerperal women; 3 times in typhus; twice in tuberculosis, emphysema, cardiac hypertrophy, pericarditis, and valvular disease; and once in pyæmia.

The chronic cases were mostly associated with disease of the heart, tubercles, and carcinoma.

Cysts were noticed in 8 cases.

Dilatation of the pelvis of the kidney was observed in 9 cases. In 3 cases only upon one side; in 8 connected with dilatation of the ureters; in 5 with suppurative nephritis. The causes were in one case stricture of the urethra; in 5 enlargement of the prostate; in 1 cicatrization in the base of the bladder from vesico-vaginal fistula; in 1 urolithiasis; in 1 cancer of the uterus; in 2 pressure from ovarian tumors.

Concretions were noticed in 2 cases lodged in the pelvis of the kidney.

In 1 case the right kidney had *two ureters* which united into one just before reaching the bladder.

The remainder of the report is taken up with lesions of the bladder, prostate, uterus, ovary, bony, muscular, and dermal systems, for the details of which our want of space compels us to refer the reader to the original. In thus reluctantly taking leave of these valuable contributions, we cannot avoid repeating our admiration at the patience and skill exhibited in working up such a mass of pathologic material into comprehensive results of no mean statistical importance. May we not hope that those connected with our own hospitals will ere long furnish similar reports for the enrichment of our medical literature?

Functions of the Lobes of the Cerebrum.

In a paper on the Phenomena of Life and Mind, by Robert Dunn, F.R.C.S. Eng. (*British Medical Journal*, Sept. 28th, 1867, p. 267), the author stated what are his own convictions as to the psychical activities of the three main divisions or lobes of the cerebrum—not hastily taken up, he said, but founded upon the facts of pathology observed by himself or recorded by others, and upon those of developmental anatomy, comparative

and human; namely, that the anterior lobes of the brain are the seat of the intellectual, the middle of the personal or individual, and the posterior of the social and affectional activities or attributes of human mind. In other words, as he had said elsewhere: "His mind rests in the conviction that the anterior are the intellectual lobes of the brain, the seat of the intellectual faculties, the reasoning and reflecting powers; that the middle lobes are the personal and the seat of the animal activities, of the individual or personal affections or attributes, and of the moral and religious intuitions of the mind; and that in the posterior lobes are seated the social and affectional activities and propensities, those endearing attributes which are the charm of our existence here, binding together in the bonds of affection the ties of family, of friendship, of country, and of race."

Blanching of the Hair.

On this subject the *London Lancet* contains the following:

Physiologists have been at a loss to account for the sudden whitening of the hair which is known to be produced by intense and sudden terror or profound grief. Mr. Erasmus Wilson, in a paper recently read at the Royal Society, threw considerable light upon the question. The paper was founded on a case apparently unique, in which every hair of the head was colored alternately brown and white from end to end. The white segments were about half the length of the brown, the two together measuring about one-third of a line. Mr. Wilson suggested the possibility of the brown portion representing the day growth of the hair, and the white portion the night growth, and this opinion was corroborated by the remarks of Dr. Sharpey and others of the Fellows who took part in the discussion which followed the reading. Under the microscope the colors of the hair were reversed—the brown became light and transparent, the white opaque and dark; and it was further obvious that the opacity of the white portion was due to a vast accumulation of air-globules packed closely together in the fibrous structure of the hair, as well as in the medulla. There was no absence of pigment, but the accumulation of air-globules veiled and obscured the normal color and structure. Mr. Wilson observed that, as the alteration in structure, which gave rise to the altered color, evidently arose in a very short period, probably less than a day, the occurrence of a similar change throughout the entire length of the shaft would explain those remarkable instances, of which so many are on record, of sudden blanching of the hair; and he ventured to suggest that during the prevalence of a violent nervous shock the normal fluids of the hair might be drawn inward toward the body, in unison with the generally contracted and collapsed state of the surface, and that the vacuities left by this process of exhaustion might be suddenly filled with atmospheric air. Dr. Sharpey mentioned a recent example of sudden blanching of the hair, which had been observed by Dr. Landois, of Greifswalde, as reported in Virchow's Archiv, and which was ascertained to be due to accumulation of air-globules in the fibrous substance of the hair.

Animal Electricity.

M. Schultz-Schultzenstein has written a fine work on "Researches on Animal Electricity" (*Gaz. Hebdom.*, Sept. 6). Its aim is to prove that all the so-called animal electricity does not proceed from nervous, vital, or muscular action, and is nothing else than purely *chemical* electricity, having its origin in the commencement and progress of a chemical decomposition in the dissected animal parts in contact with the air. This shows, moreover, that the salted water, so much indeed of it as may be in contact with the ani-

mal parts, is an electro-motor, and, of course, that the pretended muscular current is nothing more than a current produced by a solution of salt on the salted animal parts.

These physiological experiments, by which it is expected to prove the existence of an animal electricity, produced by the vital action of muscles or nerves, will never be successful, save by the intervention of salt or salted water; without salt in some form, there is no success. The electricity produced then in these experiments, is not an animal electricity, but a chemical one, dependent on the salt. Animal electricity is an illusion.

Granular Detritus of Elements, in Process of Cadaveric Alteration.

By CH. ROBIN (in *La France Médicale*, October, 1867).

Another very important particularity, presented by anatomic elements, while in a state of putrefaction, stationary or progressive, is their reduction into molecular granulations, very fine, grayish, exceedingly numerous, and endowed with very active Brownian movement. The production of these fine granulations is a phenomenon happening subsequently to that of the exudation of sarcodized (fleshy) gouts, and others, described in another place; it does not reveal itself until the odor of putrefying animal substances is already manifest beyond a doubt. The half-solid anatomical elements, whatever they may be—fibres, or cellules, if they are homogeneous, without granulations, finally become finely granulous, in a uniform manner, throughout their entire thickness. At the same time the contour of these elements becomes pale, badly determined, and the number of delicate molecular granulations floating in the liquid become more and more abundant as these particularities are pronounced more positively.

Throbs of the Heart and Pulse Reproduced by Photography.

By M. CH. OZANAM (*Gaz. Hebdom.*, Sept. 6, 1867).

After having given a description of his apparatus and operative procedures, M. Ozanam adds: "The *dicrotism*, that is to say the double stroke, has been described by M. Marey as a normal condition of the pulse. Before the discovery of the sphygmograph this could not be determined—save in certain pathological cases, as forerunners of hemorrhages. Our photographic contrivance corroborates the assertion of my wise *confrère*, but at the same time settles the question in a more complete manner. It shows, in a word, that the natural pulse is not only *dicrotic*, but *triple* in certain cases; in fact, after having mounted, at a single bound, to the summit of the ladder, it redescends, by three successive falls, to the level below. According to my observations, already numerous, the first undulation corresponds with the impulsion from the left side of the heart; the second will be due to the impulsion of the right side of the heart; now the third, is it due to the electricity of the arteries, or to the contraction of the auricles? This it is, which has not been determined."

A Case of Cardiform Liver, containing one of the Kidneys Imbedded in its Right Border;

ACCOMPANIED WITH A RARE FORM OF HERNIA EPIGASTRICA LATERALIS.

Under the above title, Dr. Joseph Kirchberger details in the *Wiener Med. Wochenschrift*, August 7th, 1867, a rare pathological complication found in a patient who was admitted in the Zolkiewer Military Hospital, April 11th, suffering from a painful tumor

of about the size of a duck's egg, situated a little below the ensiform cartilage, and about three-fourths of an inch from the right arch of the ribs. Patient alleges that he first discovered this tumor about sixteen days ago. When admitted, the patient was thoroughly jaundiced to a deep orange yellow hue, and extremely weak. Pulse 90 to 95. The patient died at the end of three days from symptoms strongly resembling typhus. A few hours before death the tumor disappeared. This fact fortified the diagnosis of hernia, the general weakness of the muscular tissue of the abdominal walls preceding dissolution permitting a spontaneous reduction. The value of the post-mortem was considerably impaired by an incision which had been made in the abdominal walls directly through the seat of the tumor by a meddlesome nurse. This unfortunately prevented the full determination of the presence of a hernial sac. On making transverse incisions, and turning back the flaps, the gall bladder, partially distended with bile and gas, was seen. The left lobe of the liver was wanting, and the gall bladder occupied the place answering to the right longitudinal fossa. This latter fossa was not fully developed. No trace of suppuration or tympanitis was found. On removing the liver, the right kidney was found imbedded in its substance. After the removal of the kidney the liver presented a three-cornered shape, somewhat resembling the heart. The substance of the kidney and liver was normal. The gall bladder was so deeply colored by infiltration of bile that no marks of compression could be distinguished, though it undoubtedly formed the protruding portion of the tumor. An examination of the remaining organs showed that the patient died of hyperstatic inflammation of the lungs induced by typhus.

New Researches on the Cardiac Circulation of Animals.

Dr. JUDEE (*British Medical Journal*) has just published a pamphlet on this subject. He shows that in frogs, what is, by common consent, called first movement, is compounded of the auricular portion and the dilatation of the ventricle; that the second is formed by the contraction of the ventricle, and the dilatation, *per contra*, of the two auricles with which the heart of this batrachian is provided. In the second part of the book, relying not only on his own experiments on frogs, but on those made on horses by MM. Chauveau and Marey, M. Judee stated that what these physiologists have taken for the commencement of the first movement, or systole, was nothing but the end of the second, or diastole of the heart. In other words, that the systole of the auricle does not form part of the systole of the ventricle, but of its diastole; so that, in fact, in the horse, at least, the cardiac revolution does not commence, as is generally supposed, by the systole of the heart, but by its diastole. When M. Judee compares this cardiac revolution to a measurement in three movements, he is led to admit: 1. That the first movement, or great silence, corresponds to the dilatation of the ventricle. 2. That the second and third movements are formed by the sounds of the heart separated one from the other by the short silence, during which the ventricle contracts itself.

Superiority of Man over Woman.

Dr. C. VOGT, in his Lectures on Man, says: It has long been observed that among people progressing in civilization the men are in advance of the women; whilst among those which are retrograding, the contrary is the case. Just as, in respect of morals, woman is the conservator of old customs and usages, of traditions, legends and religion, so in the material world she preserves primitive forms which but slowly yield to the influences of civilization. We are justified in saying that it is easier to overthrow a government by

revolution than alter the arrangements in the kitchen, though their absurdity be abundantly proved. In the same manner woman preserves, in the formation of the head, the earlier stage from which the race or tribe has been developed, or into which it has relapsed. Hence, then, is partly explained the fact that the inequality of the sexes increases with the progress of civilization. To this must be added the circumstance that the lower the state of culture, the more similar are the occupations of the two sexes. Among the Australians, the Bushmen, and other low races, possessing no fixed habitations, the wife partakes of all her husband's toils, and has in addition the care of the progeny. The sphere of occupation is the same for both sexes, whilst among the civilized nations there is a division both in physical and mental labor.

Chinese Theory of Life.

Dr. WILEY, in his "Medical Observations in China" (*Cincinnati Lancet and Observer*), says: The Chinese are ignorant of physiology, and know little of the great vital functions of the body. Yet they have a theory of life. They are not acquainted with the circulation of the blood. They know the blood moves, but as to its great circuit around the body they are entirely ignorant.

As a consequence, their theory of pulse is a striking novelty. Wherever in the system they find a pulse they regard it as an independent manifestation, having no connection with any other pulsation. Finding a pulse in the lower extremities, they do not infer that it has any connection with the heart. In their examinations they find as many as two hundred different pulses, which are described in their books, each having a distinct indication as to the condition of the different parts of the body. To the foreign physician it looks supremely ludicrous to see them examining the pulse, first in the wrist, then the neck, the breast, the leg, the abdomen, &c., before a correct diagnosis is ventured upon.

Their theory of life runs through all their treatment of disease and their idea of death. It may be called the theory of heat and cold. The living body is a play between warmth and cold. Life is warmth; its great antagonist is cold, and it is regarded as much a positive body as heat. The phenomena of life consist of the constant antagonism between these two forces. The heat of the body is kept up by food; and the great object of food is not so much for nourishment, in their view, as for the purpose of generating heat; and this it does do, according to our knowledge of its chemical effects, so that they are not far wrong. The introduction of food into the stomach supplies fuel for heating the system; it is appropriated by the process of digestion; passes through various channels into the lungs, where, by the fanning operation of that organ, its excessive heat is cooled. It is diffused by the lungs—not by the heart—throughout the system; and while so diffused life is kept up; but if cold is allowed to be introduced, which is regarded as a positive substance, it will diffuse itself in the same manner as heat, and a battle ensues. As the battle goes on, heat sometimes gains the ascendancy, and the patient is thrown into a fever: cold sometimes gains the ascendancy, and the patient is thrown into a chill. When heat gains a permanent ascendancy the patient is restored; but when cold gains a permanent ascendancy, death ensues.

They know nothing of pathology, and in consequence the great question in their practice is whether the patient must be submitted to the hot treatment or the cold treatment. Attention is directed altogether to the theoretic battle that is going on in the system; and after all I don't know but it turns out pretty well in the end. When the physician finds a patient burning up with a fever, he goes to work to reduce and deplete the system; or if he finds him shaking with a chill, though his theory be wrong, his practice

is right, for he goes to work to increase his warmth by hot blankets and stimulants. Many a patient, no doubt, is saved, on a false theory there, as they are, we must admit, in this country.

Pathology of Pott's Disease of the Spine.

In the *Boston Medical and Surgical Journal* for December 12th, Dr. F. C. ROPES has an article on this disease, in which he indorses the views of Dr. BAUER, of New York, in the following words:

The etiology of this disease deserves attention. We are told by almost all authorities, that it is essentially a scrofulous disease; that it never occurs except in unhealthy, underfed children, or in those of weakly or syphilitic parents. And in proof of this, our attention is directed to the anæmic appearance of such children, and to various other circumstances.

Unquestionably, weakly children are more liable to this, as to every disease, than those who are robust; and there can be no doubt that insufficient nourishment and generally bad hygienic conditions, do act as predisposing causes. But I am, on the whole, disposed to agree with Dr. Bauer, of Brooklyn, N. Y., who, in his "Lectures on Orthopædic Surgery," maintains that this generally received explanation is inapplicable to many, if not to most cases. Dr. Bauer thinks that, in many cases, a history of some sort of local injury is to be obtained; and that in others such an injury has been sustained, though it may have escaped notice at the time, as is frequently the case with injuries which children receive while at play; especially since no symptoms of disease of the vertebræ may appear for a considerable time. He says, moreover, not without reason, that it is very easy for a practitioner, when he sees a child suffering from advanced carious disease of the spine, attended with abscesses, perhaps, and great constitutional disturbance, brought on by this very disease, to make out a case of scrofulous affection; whereas, in many such cases it will be found, on accurate inquiry, that the children were previously as healthy, in all respects, as other children, up to the time of the fall or injury which brought about all this local and afterwards constitutional disturbance. Dr. Bauer also cites the case of necrosis of other bones following injury, in proof of his position.

I must say that these views seem to me very reasonable; although we all have certainly been taught to look on these cases as scrofulous (so called), and although I am not aware that Dr. Bauer, or any one else, has brought forward enough facts to prove the truth of these assumptions.

Examination of the Eyes of School Children.

A curious work has been published at Breslau by Dr. HERMANN KOHN, in which he gives the result of the examination of the eyes of 10,860 school children. Of these 17.1 per cent. were shortsighted. This he attributed to the faulty construction of the desks and forms, which required the children to read with the books close to their eyes.

PHYSICS, BOTANY, CHEMISTRY, AND TOXICOLOGY.

Medical Botany of Norfolk County, Mass.

IN a paper read before the Norfolk (Mass.) District Medical Society, May 8th, 1867, (*Boston Medical and Surgical Journal*, June 20th, 1867, p. 409), Dr. Josiah Noyes, of Needham, says: Many plants, as though forgetful of the order of nature, put forth flowers before leaves; among which are the elm (*ulmus*), hazel, alder, maple, bloodroot and skunk-cabbage, etc., the last of which, though it has borne the various generic names of *Pothos*, *Ictodes*, *Dracontium*, and *Symplocarpus*, receives from all its deserved and appropriate specific designation of *foetidus*, as the olfactories will never mislead you in the recognition of this plant. It is accredited for stimulant, antispasmodic, and narcotic powers, and is given in doses of ten to twenty grains. By drying, it loses strength. The leaves are sometimes applied to abraded surfaces, or follow the vesicating plaster as a subsequent dressing. Its principal use is as an addition to expectorant mixtures, a diffusible stimulant and anodyne in nervous disturbances and commotions. It has doubtless, in its recent state, and in free full doses, considerable control over the spasmodic dyspnoea of asthma, taking the place, if rightly managed, of stramonium or hot coffee. An extract probably might be formed from it that could be kept without deterioration for a considerable length of time; perhaps an alkaloid might be extracted from it. In meadows and wet land, it may very easily be detected early in the spring, when it appears as a dark-brown or purplish variegated cone projecting from the earth without surrounding leaves. These subsequently appear, and are very large, the flowers having disappeared. The flowers can only be detected very early.

Associated with this, you will observe, later in the season, on the borders of brooks and in meadows, a plant with a stalk rising from three to five feet, with handsome, large, plaited leaves, and a large panicle of greenish flowers; this is the famous *Veratrum viride*, the therapeutic powers of which have come into notoriety through the praiseworthy exertions and investigations of a neighboring District Medical Society. You, of course, are familiar with them, and will not require me to dwell upon this plant now, as the rapid advance of the season, and, of course, vegetation, will call forth the most active and diligent exertions of the botanist to keep pace with it. In strong but modest contrast with these are the *Coptis*, or gold thread, used in aphthous affections of infants, and *Violet*—both with modest flowers—a species (*pedata*) of the latter having demulcent and expectorant powers. From another species (*V. odorata*), the violina, or violine, said to be analogous to emetine, and “highly poisonous” (*Orfila*), is obtained in the form of an alkaloid.

The violet family, of the natural order *Violaceae*, is very numerous, very common along our roads, in pastures, meadows, and waste places. Some have white, some yellow, but most blue flowers. Some have already flowered; others will appear successively through

the season. The *Coptis* has a single species, *trifolia*, and is less common in our vicinity. Of equal modesty is a plant already flowered, occasionally met with in woods and pastures, of quite diminutive size, the *Hepatica*, of which there are two species, *H. triloba*, and *acutiloba*, or liverwort. This is a well-known demulcent, and was, for a time, of great repute and notoriety, in all the newspapers and in all the shop windows, as a cure for all coughs, etc. It has had its day, like many others, and is now little thought of, except as a mild and safe demulcent.

I would call your attention, at this time, to a good astringent found by walls and fences, around the borders of fields and pastures, and under bushes—the *Geranium maculatum*, cranesbill, of natural order *Geraniaceæ*, having purple or purplish flowers, modest, yet handsome. The root is the medicinal part, being used in powder or infusion in dysentery and diarrhœa; it is perennial. Other astringents may call for your attention for weeks or months to come, viz., the oaks, birches, willows, in their numerous species and varieties, the *Rubus*, or blackberry, etc.

The beautiful *Cypripedium acaule*, lady's slipper, of natural order *Orchidaceæ*, will be seen in woods, with its inflected, purple-veined, unique flowers (calling the most conspicuous part such), with two large, handsome leaves at the base of the stem. It has some reputation as a tonic, stimulant, and antispasmodic; and is, as Dr. King says, "extensively used in nervous disorders of females, both during pregnancy and in its absence."

The beautiful and delicate *Sanguinaria*, bloodroot, now in blossom under my window as I write, is occasionally found within our reach, but more commonly farther back in the State; it is easy of cultivation, and where it gets a foothold will stick and revel as though in its own *habitat*. The flowers are pure white, showy, and precede the leafing; natural order *Papaveraceæ*. It has with us but one species—*S. Canadensis*—and is one of our most efficient expectorants; in large doses, ten to twenty grains, a prompt emetic; given in powder, it is also a good escharotic. It takes both its scientific and common name from the color of its juice.

By a nice coincidence, as the destructive caterpillar comes forth about the 20th of April, or a little later, and needs food, the *Prunus serotina*, wild black cherry, opens its buds to feed it with its young and tender leaves. These seem its most cherished food, though it makes little objection to a taste of the tender leaves of the apple. But my business is not with insects. The *Prunus* thus introduced to your notice is a valuable tree and medicine; of natural order *Rosaceæ*. The *Prunus Virginiana* of the U. S. Pharmacopœia appears to be the *serotina* of Gray and *Cerasus serotina* of Wood; and though the U. S. Pharmacopœia calls it *P. Virginiana*, its bark is said to be of the *Cerasus serotina*; it possesses tonic and sedative power, and is used in dyspepsia, phthisis, hectic and intermittent fevers. It is said it enters into, and doubtless aids the sale of, "Wistar's Balsam of Wild Cherry" and "Ayer's Cherry Pectoral." The berries of the choke-cherry, *P.* or *Cerasus Virginiana*, are strongly styptic, and are used in aphthous affections and looseness of the bowels, as dysentery and diarrhœa. The berries of both species are much used, steeped in spirit, for such complaints.

Coptis Trifolia—Gold Thread.

Dr. C. F. POTTER, in the *St. Louis Medical Reporter*, for November 1st, 1867, p. 518, calls attention to this useful tonic, which has of late years been almost entirely neglected, although it is one of the best simple bitters that grow in this country. As is well known, it is an evergreen, with a perennial creeping root of a bright golden yellow color, whence its name, gold thread. The leaves are ternate, and stand on long slender stalks, while the

flower-stem is round and longer than the leaves, and surmounted with a quite small white flower. It grows abundantly on this continent, from Canada to Virginia, in wet and boggy places. It flowers in May. All parts of the plant may be used, but the root only is official. This occurs, dried in loosely-tangled masses of long thread, like filamentous roots, generally commingled with leaves of the plant. It has an orange-yellow color, is almost without smell, and has a pure simple bitter taste. Prof. Procter is of the opinion that the bitter principle is berberina, an alkaloid existing in several of the bitter plants; and judging from its general effect, I should presume his opinion is correct. It contains little if any tannin. I found the gold thread a most valuable remedy in dyspepsia, and general debility following cinchona in the treatment of protracted cases of intermittent fever, where we wish to increase the appetite. It is also especially useful combined with ptelia or genticus, as a promoter of the appetite in marasmus and female diseases; in the latter it is peculiarly beneficial. My usual prescription is one ounce each of the *Coptis trifolia* and *Ptelia trifoliata*, and one-half ounce race ginger, put in one quart of diluted alcohol. Of this give a tablespoonful three times a day. When the above is not acceptable to the stomach, omit the ptelia, and increase the quantity of the coptis.

A decoction of the coptis, sweetened with honey, has long been used as a wash in aphthous sore mouth of children, but is hardly active enough to be of much benefit.

I feel it always preferable to use remedies indigenous to our own country, and trust to be able to call attention, from time to time, to other native plants, the use of which have been neglected for want of proper notice and trial.

On the Separation of Tin and Arsenic.

Prof. WÖHLER (*Chemical News*, June 14) gives the following method, based upon the solubility of sulphide of arsenic in bisulphite of potash, which does not dissolve sulphide of tin. The mass, oxidized by nitric acid, is allowed to digest with sulphur and caustic potash till solution is complete (or till the formation of a metallic oxysulphide, which is separated by filtration). The liquid treated by excess of sulphurous acid, is allowed to rest for some time, and is then evaporated till two-thirds of the water and all the sulphurous acid have gone off. Filter off the sulphide of tin, and wash it, not with water, which must not be used here, but with a concentrated solution of chloride of sodium. This may be removed from the precipitate by means of a slightly acid solution of acetate of ammonia, but the liquor so obtained must not be added to the washing waters charged with salt. The sulphide of tin, when dried, may be converted into oxide of tin by roasting in contact with air. The arsenic which the liquid contains in the state of arsenious acid may be precipitated by a current of sulphuretted hydrogen.

Glyconine—a new Glycerole?

To obtain this compound, M. EDMOND SICHEL (*Journ. de Pharmacie*) employs 4 parts (by weight) of yolk of egg, and 5 parts of glycerine, which he mixes simply in a mortar. It has the consistence of liquid honey, and is unctuous like the fatty substances, over which it has the advantage of being easily removed by water. It is unalterable, a specimen having been left exposed to the air for three years with impunity. Applied to the skin, it forms on the surface a varnish, which protects it from the contact of the air. These properties render it serviceable for broken surfaces of all kinds, particularly for burns, erysipelas, and cutaneous affections, in which it soothes the itching, and also for sore nipples; its harmlessness prevents, in the latter case, any interruption of suckling.

Action of (Animal) Charcoal in Removing Organic Matter from Water.

MR. EDWARD BYRNE (*Chemical News*, July 7) has performed many experiments, and comes to the conclusion, that by chemical agency of charcoal bad water could be purified to a very limited extent.

The editor of *Chemical News* remarks: Mr. Byrne has overlooked the important fact, that the efficacy of charcoal as a filtering agent for the removal of organic matter does not depend upon mechanical absorption, but upon oxidation; and from his drawing no distinction between the removal, by charcoal, of the inorganic and the organic impurities of the water, it would seem as if he were ignorant of this property. A few ounces of charcoal, used properly, will oxidize a pound or more of organic matter. Charcoal has not fair play in a filter, unless it is occasionally allowed an opportunity of absorbing atmospheric oxygen.

Poisoning by Strychnia Successfully Treated by Cannabis.

Dr. STACY HEMENWAY, of Eugene City, Oregon, reports, in the *Pacific Medical and Surgical Journal* for August, 1867, p. 113, the following case:

James G——, a resident of Lane County, Oregon, aged 38, swallowed a quantity of strychnia accidentally, at about half-past 8 o'clock in the morning. He had been in the habit of putting strychnia out to kill, as he said, the "varmints," and had carelessly left upon the table a moistened teaspoon which he had been using in the finely powdered substance, a considerable quantity adhering to the spoon. Observing a cup of milk on the table, and wishing to drink it, and being withal somewhat under the influence of liquor, he thoughtlessly stirred the cream into the milk with the spoon and swallowed it. He stated that, immediately after taking the poison, everything seemed to turn green, and he suddenly fell to the floor, with inability to move his limbs, while his whole muscular system was in a state of tremor. He remained unable to move until about 2 o'clock P.M., and was unfortunately entirely alone. The nearest house was perhaps a fourth of a mile off, which he succeeded in reaching in the course of two hours, by crawling and walking at intervals between the spasms, which were of frequent occurrence. Vomiting occurred once on the way. A messenger was now sent in haste for me. I reached the patient at about 8 o'clock P.M., nearly twelve hours after the swallowing of the poison, and found him suffering from the characteristic symptoms of poisoning by strychnia, having spasms, extensive, frequent, and severe, and excessive spitting of frothy saliva. About five minutes after my arrival a severe convulsive paroxysm occurred, which lasted twenty minutes. These violent spasms occurred at intervals of about half an hour, and about four thrills per minute passing through the system. He was suffering also from spasmodic contraction of the muscles of the chest about four times in a minute, with a feeling of impending suffocation. There was marked rigidity of the cervical muscles, the jaws were set, and he complained of a sense of constriction of the fauces, with difficulty of swallowing. The extremities were cool, countenance anxious, pulse 110 to the minute, and the mind clear and perfectly sensible. Having with me the *Cannabis indica* in the form of the alcoholic extract, I immediately administered 4 to 5 grains in pilular form, and repeated the dose in five minutes; then four similar doses at intervals of ten minutes; afterwards three such doses at intervals of fifteen minutes, with a rapid amelioration of the symptoms. Symptoms of the intoxicating effects of this drug began now to be slightly

developed. The administration of the remedy was suspended for an hour, and then resumed in gradually diminished quantities, alternated with spirits of camphor in drachm doses every fifteen minutes, until four doses of each were administered, when the patient began to be comparatively quiet, with a strong tendency to sleep. He began to sleep well at about 2 o'clock A.M.; left directions with an attendant to administer a similar dose of each, one hour apart.

During the administration of these remedies the spasms gradually grew less violent, together with a gradual diminution, in severity, of the tremulous movements running through the system. The patient slept well until late in the morning, when he awoke complaining of extreme exhaustion, with general muscular soreness. A very slight thrilling sensation running through the system still prevailed. The patient was directed to take one three-grain pill of the extract cannabis every two hours for six hours, alternated with drachm doses of spirits of camphor. Nutritious diet with tonics soon rendered recovery complete.

Experiments on the Poison of the Cobra-di-capello.

The *Melbourne Argus* contains an interesting article, by Dr. C. B. HALFORD, on the above subject, from which the following is extracted :

When a person is mortally bitten by the Cobra-di-capello, molecules of living "germinal" matter are thrown into the blood, and speedily grow into cells, and as rapidly multiply; so that, in a few hours, millions upon millions are produced, at the expense, as far as I can at present see, of the oxygen absorbed with the blood during respiration; hence the gradual decrease and ultimate extinction of combustion and chemical change in every other part of the body, followed by coldness, sleepiness, insensibility, slow breathing, and death. The cells, which thus render in so short a time the blood unfit to support life, are circular, with a diameter, on the average, of $\frac{1}{1700}$ of an inch. They contain a nearly rounded nucleus of $\frac{1}{2800}$ of an inch in breadth, which, when further magnified, is seen to contain other still more minute spherules of living "germinal" matter. In addition to this, the application of magenta reveals a minute colored spot at some part of the circumference of the cell. This, besides its size, distinguishes it from the white pus or lymph corpuscle. Thus, then, it would seem that, as the vegetable cell requires for its growth inorganic food and the liberation of oxygen, so the animal cell requires for its growth organic food and the absorption of oxygen. Its food is present in the blood, and it meets the oxygen in the lungs; thus the whole blood becomes disorganized, and nothing is found after death but dark fluid blood, the fluidity indicating its loss of fibrine, the dark color its want of oxygen, which it readily absorbs on exposure after death. It results, then, that a person dies slowly asphyxiated by deprivation of oxygen, in whatever other way the poison may also act; and so far as the ordinary examination of the blood goes, the post-mortem appearances are similar to those seen after drowning and suffocation. I have reason to believe that the materies morbi of cholera is a nearly allied animal poison. (*Chem. News*, July 26th.)

Chronic Strychnia Poisoning.

The following remarkable case occurred at the Middlesex Hospital, London (*British Medical Journal*, September 21st, 1867, p. 250) :

J. D——, æt. 49, was admitted into the Middlesex Hospital, on December 22d, 1866. She had been weak and nervous for some six weeks, with loss of appetite, sleeplessness,

delirium, at times raving, and loss of memory, daily increasing. Her mind became quite upset, and on December 3d she took a sixpenny packet of "Battle's Vermin Killer," with the idea of putting an end to her sufferings. Almost immediately after swallowing the poison she felt a "hot burning taste" in her mouth, followed shortly afterwards by twitching of the whole body, increasing in intensity, and producing the feeling as if "torn in pieces." This was accompanied by screaming, over which (she said) she had no control whatever. These symptoms lasted, with great severity, for about half an hour, when she became insensible, in which state she remained for six or eight hours. On coming to herself again, she experienced the same burning sensation in her mouth, with a feeling of great thirst, and found that she could not open her mouth. There was, however, no difficulty in swallowing. There were severe "spasms" over the whole body, but chiefly in the lower extremities, aggravated to a great extent, or produced, by any one touching her. She experienced a feeling that something dreadful was going to happen to her.

From this time the symptoms seemed gradually to subside; and by next evening she could open her mouth slightly, but was not able to protrude her tongue. The spasms became less and less severe, and by December 8th she had only occasional "tremblings," but was extremely weak, had frightful dreams, and her eyesight was hazy. In fact, up to the day of her admission, she continued to have attacks of "tremblings," pain, and stiffness in her temporo-maxillary articulations, admitting only of partial opening of the mouth, insomnia, bad dreams, loss of appetite, and great prostration, confining her closely to bed.

On admission, she was in a state of general prostration, with weakness and trembling of the lower extremities, and incapable of supporting the weight of the body. She had occasional pain in the temporo-maxillary articulations, and could only open the mouth to a slight extent. There was great thirst; the appetite was very poor; the tongue slightly furred. She passed urine and motions without any difficulty. Pulse 102, weak; a faint systolic murmur was heard at the apex of the heart. Pills, composed of three grains of extract of conium and five grains of powdered camphor, were administered, and on December 25th she was able to stand erect, and was free to a much greater extent of the pains in the temporo-maxillary articulations. She was then put upon iron and quinine, in addition to the hemlock.

From this time she rapidly improved, and, with the exception of an aphthous patch on the tongue and a mass of bleeding piles, accompanied by diarrhoea, her symptoms continued uninterruptedly to abate; and on January 3d, exactly one month after taking the poison, she was reported entirely free from twitchings, pains in the extremities or jaws, and now able to open her mouth freely. She was discharged on January 15th, well.

It will be observed that, shortly after the ordinary physiological symptoms of the poison had developed themselves, the patient became insensible, and remained in that state for six or eight hours. This is a most unusual effect of strychnia poisoning, as the patient is generally painfully conscious of every symptom. Dureau, however, mentions a case (*Annales d'Hygiène*, vol. xvii, p. 28) of a woman who, after having been for nearly two days in more or less violent paroxysms, lapsed into a comatose state for more than twelve hours. Another striking peculiarity was the continuance of the symptoms for a month after taking the poison; and, strange to say, in the case of Dureau's, quoted above, there was a chronic state of a somewhat similar nature, followed by muscular atrophy, which left the patient almost helpless at the end of eleven months.

Poisonous Effects of Nitro-Benzole.

Dr. P. H. VANDER WEYDE, late Professor of Chemistry and Toxicology, at the New York Medical College, writes as follows, on the injurious effects of nitro-benzole (*Medical and Surgical Reporter*, June 15th, 1867, p. 499):

This substance is also obtained in the same way that gun-cotton, or pyroxylin, is made from ligneous fibres. The benzole from which it is made must not be confounded with the so-called benzine used by the house-painters, and obtained by distilling petroleum; the products of the distillation of the last substance belong all to the series: C_2H_4 , C_4H_6 , C_6H_8 , &c. Benzine is $C, 4H_{16}$. Benzole, on the contrary, answers to the formula, $C_{12}H_6$. It was at first made from the gum benzoës, from which the name. It was afterward also obtained from coal-tar. When treating this benzole with fuming nitric acid, we obtain an oil resembling the oil of bitter almonds, also called oil of mirbane. The proper chemical name by which it goes at present is nitro-benzole.

It is a powerful narcotic poison, which sometimes, however, does not develop its poisonous action for three or four days. A small dose given to an animal usually kills, not in the first few days; in one case, even nine days elapsed before death occurred. The symptoms are drowsiness, convulsions, and coma, as verified in five cases where drops of nitro-benzole had been accidentally taken by the mouth. Four of the five persons died. One case is even recorded in England, when in 1860, a workman, handling a vessel with nitro-benzole, spilled a large quantity upon his apron. Not suspecting any evil effects, he breathed the vapor arising from the liquid on the apron. In four hours he began to feel unwell, and in nine hours he was dead.

Notwithstanding its smell like bitter almonds and Prussic acid, it is seen to be entirely different in its chemical composition and origin. At present it is extensively used for scenting almond soap, and I have even found it in the bitter almond flavoring extracts used in the culinary department of our households; and cases have already occurred where symptoms of poisoning manifested themselves, the cook having used an unnecessarily large quantity of this substance for flavoring puddings.

In the same way as for the chemical treatment of a poisoning case with hydrocyanic (Prussic) acid or its compounds, has been recommended the use of a solution of green protosulphate of iron, in order to convert it into insoluble Prussian blue; so I would recommend as an antidote in a case of poisoning with nitro-benzole, weak acetic acid and pulvis ferri, in order to convert it into aniline, and to convert this aniline by weak chlorine water, to an insoluble and harmless aniline color. However, the stomach-pump should always first be used, if possible.

Poisoning by Mercurial Methide.

Upon poisoning by mercurial methide, P. H. VANDER WEYDE, M.D., late Professor of Chemistry in the New York Medical College, says (*Medical and Surgical Reporter*, June 29th, 1867, p. 539):

This substance is prepared by heating in a flask ten parts of iodide of methyl, one part of acetic ether, and a small quantity of sodium amalgam. After cooling, the mixture is distilled, the water poured off, the acetic ether removed by alcoholic potassa, and the remainder washed with water. It contains more than four-fifths of mercury by weight.

The following instances show the injurious effects of the vapors of mercurial methide on the human system.

A chemist in England, occupied for ten years in his business, was during three months

engaged in the preparation of this substance, and undoubtedly was continually inhaling portions of the vapor. He began to suffer from impairment of sight, afterward numbness of the hands, deafness, and general weakness. His gums became sore, swollen, and tender. He moved his limbs slowly and spoke indistinctly. He became worse and worse after being removed to the hospital. His breath and whole body evolved a very offensive odor. He became maniacal, and died in fourteen days after admission to the hospital.

In the beginning of 1865, another chemist in Edinburgh, worked about two weeks with mercurial methide. Two months afterward, he went to the hospital with serious symptoms of the effect of this poison. He soon became idiotic, recognized nobody, became deaf, lost the faculty of speech, and only retained the power of muttering and crying out. He is still living in the hospital, a helpless idiot, with no prospect of recovery, only able to move his limbs convulsively when he becomes violent.

Effects of the Use of Tobacco and Snuff on the Nervous System.

The Abbe MIGNE says that having acquired the habit of using snuff in large quantities, he found a marked derangement of the nervous system, and a rapid loss of memory, not only of the present but of the past. He abandoned its use and a veritable restoration of the health and spirits followed, and his memory recovered its sensibility and force. The same thing happened to Mr. Dubrumfaut, the celebrated chemist, in renouncing the use of tobacco.

Poisoning by Chlorine Vapor.

Prof. MAISCH says that a direct antidote to the poisonous effects of the inhalation of chlorine is sulphuretted hydrogen, the halogen combining instantly with the hydrogen, liberating sulphur. He has tried it himself after accidentally inhaling chlorine, and obtained immediate relief. The same remedy would doubtless be effectual in bromine poisoning.

Poisoning by Vapors of Metallic Mercury.

Dr. P. H. VANDER WEYDE, late Professor of Chemistry and Toxicology in the New York Medical College, contributes to the *Medical and Surgical Reporter* for July 27th, 1867, p. 70, the following remarks on poisoning with metallic mercurial vapors:

The injurious effects of these vapors on animal life and the symptoms produced are sufficiently known to the profession. Plants suffer by it even more than animals. The breaking of a mercurial thermometer and the spilling of the mercury on the floor of a hot-house has often caused the death of a number of plants. Some chemists in Holland experimented as early as 1797 on this subject, and proved that the fatal effects were only to be counteracted in two ways: by sulphur, which absorbs the vapors, forming a non-volatile sulphuret, and by covering the mercury by water, which prevents all evaporation entirely; in fact, water has been found impenetrable for mercurial vapors. Boussingault has lately repeated and verified those experiments, and reported the results last May, at the French Academy. He found, however, that notwithstanding gold leaf was not visibly affected by the vapor of mercury when sulphur was present, a delicate balance showed some increase in weight. Growing plants are no preventive against the injurious effects of the vapor, as has lately been asserted. Their vitality is too rapidly interfered with, and they soon cease to absorb the vapors. Iodized silver plates attract the vapors very powerfully, provided they have been exposed to the light. When kept in the dark, they do not attract any mercurial vapor, except at a higher temperature (150° F.), as every

daguerreotypist knows. Their action extends, however, only for a short period of time. Flowers of sulphur, spread through the cracks of the floor when small globules of mercury are suspected to be present, is the best preventive against its injurious effects. It is also advisable to remove from between the cracks all the mercury that can be got at; a narrow strip of common sheet tin is the best, as every particle of mercury it touches will adhere to it, forming an amalgam of tin and mercury, from which any excess of mercury is easily removed.

The symptoms of poisoning with metallic mercurial vapors are either salivation, sore gums, and eruptions, or paralysis, giddiness, &c. The first class is easily cured by chloras potassæ, gr. v, ter die. The second class (palsy) is not so easily managed; iodine and hydrated protosulphuret of iron have been recommended. Sulphur and sulphuret of potash externally and internally, in moderate doses, I found of some benefit when persevered in for some time.

Alleged Poisoning by Morphia.

[*Superior Court of Buffalo—Frances C. Dustin, Administratrix of James E. Dustin, deceased, against Merrell Eugene Shaw, M.D.*]

This action, reported in the *Buffalo Medical Journal* for November, 1867, p. 121, was brought on before Hon. George W. Clinton and a jury, November 12, 1867, under a statute of this State, enacted in 1847, permitting an executor or administrator to maintain an action at law against a physician or surgeon in the case where the death of the testator or intestate is occasioned by mal-practice, in a similar manner to that in which an action for mal-practice was previously allowed to the injured person himself when the injury did not result in death.

The complaint in this cause alleged that about two o'clock in the morning of the 30th day of June, 1867, James E. Dustin, the plaintiff's intestate, being "seized by a sudden and painful attack in the right iliac region," employed the defendant in his capacity of a physician; and that the defendant then administered to him "subcutaneous injections over the right iliac region of large quantities of a poisonous drug called morphia, which entered into the system of said deceased, and that thereby and in consequence thereof at about the hour of nine and a half o'clock in the morning of said 30th day of June the said Dustin died;" and that the death of said Dustin was so caused by the unskilfulness, want of proper care, neglect, wrongful act, and default of the defendant. The plaintiff claimed to recover the sum of \$5000.

The answer of the defendant admitted that at the time mentioned he had given morphia to the deceased by subcutaneous injection, but he denied that he had given it in an excessive dose, or improperly, or that the death of Dustin was caused by morphia, or that the defendant had been guilty of any unskilfulness, negligence, want of care, &c., alleging on the contrary that the treatment was in all respects judicious and proper.

The testimony having been closed the counsel for the defendant requested the court to instruct the jury to render a verdict for the defendant on the ground that whatever might have been the actual cause of death, it appeared indisputably that the treatment resorted to was, under the circumstances, proper and discreet, and that the weight of testimony to that effect was so preponderating that if a contrary verdict should be rendered by the jury it would be the duty of the court to set it aside.

His Honor, Justice Clinton, said in substance, that the plaintiff had not shown that the morphia which was administered to the deceased had anything to do with his death; that according to the medical testimony the grain of morphia was not an adequate cause

of death. The plaintiff having the burden of proof that the death was attributable to the morphia, has wholly failed to establish that proposition. Physicians are often called upon to act in sudden emergencies, in cases of great distress, often when much doubt must necessarily exist as to the remedy. Omniscience and infallibility are not exacted of them. In this case the defendant has acted in a manner which the other physicians who have been sworn have approved as proper treatment of his patient. The defendant therefore stands wholly vindicated and exempt from blame. A verdict was directed for the defendant.

The verdict, or rather the refusal of Judge Clinton to submit the case to the deliberation of the jury, is doubly satisfactory. It is said, since the trial, that there were one or two men upon the jury ready to fine handsomely for the widow, had opportunity been granted, showing, if so, that within the last few years an unsafe and unprofessional habit has obtained countenance, by which members of the legal profession obtain the conduct of suits upon shares. The terms are such that the chief operator and instigator loses nothing if unsuccessful, and gains one-half or even more, if he wins. The plaintiff advances the necessary costs of the suit, and the operator furnishes the advice and works up the case. But for this custom, most of the unjustifiable suits now brought before the courts would never be entered upon the records, and many, very many, who now appear as plaintiffs would never have mistrusted themselves aggrieved. We do not think that this operates against medical men more frequently than against all others; it may be seen everywhere, and every fair-minded individual can see the natural effect of such practice.

The whole legal procedure was based upon nothing, and carried on upon the expectation that a jury might favor a widow regardless of right, and herself and friends be indirectly benefited by the natural sympathy which men feel for women.—EDITOR.

The Antagonistic Action of Opium and Belladonna.

Dr. JAMES T. NEUMAN, in a communication to the *Chicago Medical Journal*, November, 1867, p. 528, gives the following case, among others:

A nymph du pavé had been in the habit of buying morphia, by the bottle, of a druggist just opposite my office. I have, on several occasions, seen her buy sixteen grains, pour it in the palm of her hand, and swallow it with a gusto that would astonish you.

Now, to the case in question. The quantity of morphia that she took I am unable to determine, but it must have been very great. When I was called in I found her in a comatose condition; stertorous breathing; small, feeble pulse; pupils contracted; jaws firmly set; extremities cold. Not one drop of liquid could I force down her throat. I was in a dilemma. I had every reason to believe that it was morphia she had taken, but what could I do? I could not use the belladonna, because she would not swallow. Must this woman die? No; science comes to my aid, in the shape of the hypodermic syringe and atropine, the active principle of the belladonna in a small space. Now I have it. I walked over to the store, and ordered the clerk to weigh me out two grains of atropia sulphas, and then add one ounce of water. I went back, took out my syringe, which holds about three drachms, rolled up the patient's sleeve above the elbow, inserted the point beneath the skin, and injected the fluid into the parts. I waited twenty minutes, and applied the syringe to a fresh part. At the expiration of a half hour I again used the syringe. By this time she became somewhat conscious; I then ordered six grains of the solid extract of belladonna to be divided in two parts, one to be given every two hours. She also, like other cases, complained of her eyes, and could not discern a single object for about eighteen hours. At the expiration of that time the pupils assumed their natural appearance, and vision was restored.

MATERIA MEDICA AND THERAPEUTICS.

I. PHARMACOLOGY.

Extractum Conii.

Dr. JOHN HARLEY (in *Pharm. Journal*) has proved, by experiment, that the extractum conii is a very uncertain, if not an inert, preparation. He attributes this to the fact that the active principle of the plant is, to a certain extent, vaporizable, even at a natural temperature of 70° to 90° F., and that a prolonged exposure to a high temperature is accompanied by a progressive diminution of the conia, the alkaloid being converted into ammonia and some other secondary product. It is, therefore, necessary, in order to obtain the extract in full power, to expose the juice in shallow dishes to a rapid current of dry air, having the temperature of 150° F. By this process, an extract, containing one per cent. of conia may be procured.

Cryptopia.

Messrs. T. & H. SMITH (*Pharm. Journal*) have discovered a new alkaloid in opium. It is extracted from the weak spirituous washings of crude precipitated morphia; but the quantity yielded by opium is very small, five ounces of muriate of cryptopia having been obtained from five tons of opium. They have prepared the sulphate, muriate, nitrate, the balactate, and the acetate; these all crystallize in beautiful and distinct forms, but the cryptopia itself has much better defined crystalline forms than any of its compounds. Its primary form is a hexagonal prism, and it is obtained in this condition, if crystallized slowly in a tube from its alcoholic solution. The formula of the new alkaloid is $C_{22}H_{25}NO_3$.

On the Preparation of Crystallized Phenic Acid.

W. E. BICKERDIKE (*Chemical News*, October 11th) says: It is seldom that crystallized phenic acid can be obtained by the common processes described for its preparation in the text-books; and even when the crude liquid does crystallize the still fluid portion contains the largest amount of pure acid.

The following process I find always to give good results:

The impure liquid separated from tar oils in the usual manner, by means of soda solution, is first distilled alone, so as to get rid of most of the water and H_2S . It is then redistilled in a perfectly dry retort, with one to two per cent. of anhydrous cupric sulphate, collecting the distillate in five or six dry flasks. Most of the distillate will crystallize at 16° C., though it is generally necessary to drop in a fragment of the solid.

If much H_2S is present, it should be removed by boiling or by leaving the liquid in an open vessel over night, previous to distilling with the sulphate.

Solution of Chlorinated Magnesia.

R. F. FAIRTHORNE, Jr. (*Franklin Institute*, October, 1867), thinks that this preparation, for the possession of certain properties, has advantages over the chlorinated solution of soda, known as "Labarraque's Disinfecting Liquid," and would suggest the following simple formula for making the same :

Dissolve 8 oz. of sulphate of magnesia in 2 pints of water. Triturate in a mortar 4 oz. 1 dr. of chlorinated lime with 2 pints of water. Mix them together, and agitate occasionally. After standing until the lime is deposited, pour off the clear liquid.

This consists of a solution of chlorinated magnesia, containing a small amount of sulphate of lime.

The superiority of the solution of soda or lime as a remedial agent consists in the base, magnesia, not being caustic in its nature, and is therefore better adapted for internal use or as an external application to delicate tissues.

The New French Codex.

In the *British Medical Journal* for June 29th, 1867, p. 766, there is an extended critique upon this work, by Dr. J. BIRKBECK NEVINS, of Liverpool.

Ferri Carbonas Effervescens.

Dr. S. WEIDLER, of Cincinnati, says : A formula and mode of production of this iron preparation was recommended in a foreign medical journal some years ago, of which I give an extract made at that time.

Physical and other Properties.—"When it is carefully prepared it has all the appearance of the popular and well-known granular effervescent citrate of magnesia, with the addition of a yellowish-green tint. Every drachm and a half contains ten grains of sulphate of iron, which, with a complement of bicarbonate of soda, is certain to produce, in a state of solution, four grains of nascent proto-carbonate of iron. At the same time there is developed a tartrate with a little citrate and sulphate of soda, which is, if anything, an advantage, as they act the part of a very gentle aperient, obviating the usual astringent effect of preparations of iron, as well as the too frequent constipation attending cases requiring chalybeates, particularly amongst females. The taste of it depends very much upon the amount of dilution, when taken in the dose and manner hereinafter recommended. The taste is that of a mild, sparkling, and refreshing chalybeate.

"The dose is a teaspoonful, more or less, twice or thrice a day, in a tumbler or more of sweetened water.

"In facial or other forms of neuralgia, arising from anæmia or other causes, relievable by iron, and particularly if the bowels are at all torpid, a few doses often act like a specific."

About the properties of the preparation of the ferri carbonas effervescens, I wish to remark :

1st. That it is for the great quantity of carbonic acid developed by dissolving the preparation, not only very pleasant to take, but, what is still more important, it agrees best with the weakest stomach.

2d. The iron contained in the solution as "nascent carbonate," is chemically and morphologically considered more apt for resorption than any other iron preparation.

3d. The combination of the iron with tartrate, sulphate, and citrate of soda, renders it an antiphlogistic tonic, for it acts, as is above said, the part of a gentle aperient, and for these qualities it comes near to the most estimated mineral springs of Europe.

Administration of Chloroform by Deglutition.

Dr. COCHRAN, of Mobile, Alabama (*Nashville Journal of Medicine*, Sept., 1867, p. 105), maintains with others that chloroform acts directly upon the blood; and that it produces narcosis indirectly, by virtue of a property which it shares with all the other narcotics, of diminishing the power of the organic constituents of the blood to combine with oxygen and to give off carbonic acid.

There is some reason to believe that formyl is the active anæsthetic principle of Chloroform. Formyl is the hypothetical radical of *formic acid*. Formic acid was originally derived, by some process of distillation, from the large red ant, the *formica rufa* of Linnaeus, whence its name, and is the substance that gives to that enterprising little animal its peculiar penetrating odor. It is a theme of curious speculative interest that while neither formyl nor formic acid has ever been used medicinally, the red ant itself, the *formica rufa*, has an unwritten therapeutic history. Thereby hangs a tale.

An acquaintance of mine had, many years ago, an old negro man who had been brought from Africa. This man was the subject of frequent and very distressing attacks of cramp colic, which, in blissful ignorance of the therapeutic opulence of Caucasian civilization, he was accustomed to treat with a remedy he had learned the use of in his native country—the land of Obi and Fetish. The remedy in question was the *formica rufa*. Whenever he came across a nest of these creatures he would mark the place so that it could be found when wanted; and whenever he was visited by a paroxysm of his habitual malady he might be seen rushing with breathless haste to one of his nests, tearing away the earth that covered it with impatient hands, eagerly cramming the living animals into his voracious mouth, and crushing and swallowing them as fast as he could without any preliminary employment of the art of Soyer and Francatelli. This singular medicine always gave him relief. Dr. C. takes it for granted that it owes its efficacy to the formic acid it contains; and that African therapeutics can thus plausibly lay claim to the first practical anticipation of the great anæsthetic.

Dr. C. has been accustomed to make use of chloroform in cases requiring the most prompt and energetic treatment. In these cases he gave it in doses ranging from one fluid drachm to half a fluid ounce, repeated at intervals ranging from ten to thirty minutes.

Dr. C. closes his essay with the following summary statement:

1st. Chloroform may be administered by deglutition, with reasonable expectation of benefit, in all cases where the paramount indication is the relief of pain.

2d. In all adult cases it may be given in doses of from one to two drachms frequently repeated; and where the pain is exceedingly severe and obstinate half a fluid ounce may be given at a dose safely and prudently.

3d. Chloroform passes into the system with great facility, and is with equal facility eliminated from the system. The organs of elimination are the lungs, the kidneys, and the skin.

4th. Whether any part of the drug is decomposed in the system, I am not able to conjecture; but it is certain that at least a part of what is given is eliminated without change.

5th. The rapidity of its absorption and elimination, and the promptness of its action on the organism, indicate that where more doses than one are needed they should follow each other in rapid succession, so that the anæsthetic effect of each additional dose may be

added to the anæsthetic effect of the doses that have gone before, until the pain is overpowered.

6th. Chloroform does not act immediately on the blood and by the arrest of molecular change, but that the more common opinion that it acts primarily on the nervous system through some power of elective affinity, is nearest the truth.

7th. That for the production of anæsthesia by inhalation, pure chloroform is more pleasant, more prompt, more powerful and at the same time *safer* than sulphuric ether, or than any combination of the two.

8th. By any method of administration by inhalation or by deglutition, it is not by any means so dangerous a poison even in the medical profession as it is commonly believed to be.

9th. It combines in itself more good qualities and fewer bad ones than any other article of the *Materia Medica* which approaches it even remotely in power and in range of application.

On Convallarin and Convallamarin.

On this subject Dr. W. MARME contributes the following (*Schmidt's Jahrbücher*, 1867, No. 5, p. 166).

The author has instituted experiments (in the Physiological Institute of Gottingen) on both these glycorides obtained by Walz from the *convallaria maialis* (lily of the valley), which answering the older observations on the action of the flowers, berries, and leaves of the plant, proves the presence in them of a principle producing energetic effects upon the system.

1. Convallarin, almost insoluble in water, in doses of 3 or 4 grains, acts as a purgative without causing notable inconvenience in the animals experimented upon.

2. The bitter-tasting convallamarin, soluble in water, even in small doses, produces active vomiting, equally whether given by the mouth, or injected beneath the skin, or directly into the vascular system.

3. Convallamarin has a special and marked effect upon the activity of the heart. Injected into the vascular system in small doses, it renders the heart's action slower (for dogs of the weight of from 7 to 14 kilogr., from 7 to 10 milligr., dissolved in water; for cats of 2 to 3 kilogr. in weight, from 3 to 6 milligr.; for rabbits of 1 to 2 kilogr., 2 to 3 milligr.). After large doses, the slowing of the heart's action is followed by a very marked increase in its rapidity, which soon,—generally after some irregular, peristaltic-like motions,—ceases altogether to beat. The dose which proved fatal when thrown into the cervical vein, was for hounds of the above-mentioned size, from 15 to 20 milligr.; for rabbits, from 6 to 8 milligr.; injected subcutaneously, for doves, 1 to 3 milligr.; for frogs, from 3 to 6 milligr., in watery solution.

4. Death follows generally in a few minutes after the exhibition of the above-mentioned doses, is occasioned by cessation of the heart's action, and is almost always attended by clonic convulsions of moderate degree. On immediate section the heart is found perfectly still, and its contractions cannot be excited by mechanical, chemical, or electrical stimuli. Sometimes a slight quivering is seen, particularly in the right ventricle, in mammals and birds. The paralysis of the right ventricle precedes that of the left; the paralysis of the auricles is followed by that of the ventricles.

5. The effect upon the heart's action is produced through the vagi nerves. The slowing, the succeeding increased rapidity, and the cessation of the heart's action, are produced whether the nerves are intact or divided. As a rule the cessation of the heart's action occurs more rapidly when the nerves are cut.

6. The pressure of the blood does not fall during the slowing of the heart's action; during its increase the pressure is markedly greater.

7. The respiration during the slowing of the heart's action, is for the most part quickened or unchanged; during its increased rapidity it is very much slower; is, especially in dogs, interrupted; it always continues longer than the action of the heart.

8. No constant effect is observed upon the activity of the kidneys.

9. Long after the perfect cessation of the heart's action, electric stimuli produce corresponding contractions of the stomach, intestinal canal, and bladder.

10. Convallamarin is an active heart-poison, in physiological action is closely related to digitaline, helleborine, and the active principle of upas antiar, nerium oleander, and other apocynaceæ. In respect to its action on the heart, it resembles likewise aconitine and veratrine. With these last bodies, convallamarin as well as convallarin, have a resemblance in their chemical relations; but there are likewise very decided chemical distinctions between them. Convallamarin is distinguished, by its solubility in water, from them as well as from convallarin. Finally, the last is distinguished by its insolubility in water, its precipitation by the addition of water to its alcoholic solution, its indifferent behavior to tannic acid even in an acidulated solution, as well from veratrine as from convallamarin. (*N. Y. Journal Med.*, Nov., 1867.)

Syrup of Chloroform.

Mr. T. B. GROVES gives, in the *London Pharmaceutical Journal*, the following process for the preparation of a syrup of chloroform, which, he says, manifests no tendency to separation: Put into a twelve-ounce bottle one ounce of chloroform and about three drachms of ether; to the mixture add the same volume of the syrup to be employed; observe carefully the disposition of the fluids: the chloroform and ether will probably sink, then add *guttatim* more ether until the two liquids, on being shaken together, appear indifferent as to their position in the system; finally fill up the bottle with syrup, and shake well for a minute or two.

II. GENERAL AND SPECIAL THERAPEUTICS.

Alcoholic Narcotism.

In an article on this subject, W. F. WADDE, B. A. M. B., Physician to the General Hospital, Birmingham (*British Medical Journal*, June 22d, 1867, p. 729), calls attention to the narcotic effect of alcohol, and its value in certain cases of acute disease. In certain cases of either idiopathic or symptomatic pyrexia symptoms arise, which are often the precursors of others, which are the immediate forerunners of death. The administration of alcohol is followed by a diminution of the first set of symptoms, the second set do not appear, neither does death ensue.

These symptoms occur in various diseases, but in many examples of these diseases they do not occur at all. Their occurrence or non-occurrence bears no known definite or constant relation to age, sex, previous condition, amount of local disease, intensity of constitutional disturbance, or prevailing type.

We are therefore compelled to assume that the symptoms referred to are only incidental

to the disease, and are connected with some condition or conditions of the system at large, or some of its parts, the nature of which we are not at present in a position to state. The idea which the original subject of this paper suggested to my mind may be put in the form of a question.

In framing a theory to explain the facts above indicated, by what are we justified in altogether ignoring the undoubted narcotic properties or effects of alcohol? Yet I apprehend few will be found to deny that these powers have hitherto been implicitly, if not explicitly, denied.

It must be admitted that the exciting or stimulating properties of alcohol, like those of opium, are as a rule manifested chiefly after comparatively small doses, its sedative or narcotic properties chiefly after large ones; but in these very cases is it that the use of large doses has been extolled.

Here is another curious consideration. Two of the chief indications for the use of alcohol in acute disease are, excitement of heart—rapid pulse, and excitement of brain—delirium. And the speedy result of its use, in many cases, is the calming of the brain and the retardation of the pulse. But suppose that, in adequate doses, it fail to stay the rapidity of the pulse—what then? Suppose, further, that the pulse become even more frequent than before. Had the condition of the patient improved after the administration of alcohol, we should have attributed the improvement to that administration. And how are we justified in assuming that a deterioration of his condition is not to be judged by the same law?

One disease in which empiricism justifies the occasional use of alcohol is pneumonia. And here its anodyne and sedative powers are often most marked, sometimes in the relief of the sensation of dyspnoea and the frequency of the respiration, sometimes, though not so frequently, in the relief of pain. So, in some cases of spasmodic asthma, it stops the paroxysm.

It seems to me that the use of alcohol in acute disease ought to be empirical; at all events, I have no hesitation in avowing that I so use it myself. Indeed, it is the hope that this view may become more general, that has been my inducement to write this paper. No one can be more alive than I am to the importance of devising a theory which may rightly supersede this empiricism, but the time for that has not, in my opinion, yet arrived.

1. We ought to use alcohol empirically in acute disease, because there is at present no adequate theory of its action.

2. When alcohol is beneficial, its good effects are speedily manifested.

3. It is to be given for the relief of certain conditions of the system, and not for certain diseases.

4. The conditions for which it is requisite may disappear as speedily as they may appear, and then the alcohol should be discontinued.

5. We ought, therefore, to watch and judge by results, and disregard theories.

6. In employing alcohol in large doses, we should never forget that it possesses narcotic properties as well as stimulant ones.

7. It is not proved that acute disease neutralizes or even antagonizes these properties.

8. It is not proved that acute disease does not render the system even more subject to these effects.

9. There are some grounds for believing that its narcotic properties are beneficial in certain conditions arising in acute disease.

10. No remedy potent for good can be impotent for evil.

An Inquiry as to the Therapeutic Value of Mercurials.

Dr. L. P. YANDELL (the elder), of Louisville, Ky., in the *Nashville Journal of Medicine*, July, 1867, p. 1, after discussing the subject in a general way, embodies his views in the following propositions:

1. Mercury is a medicine of the greatest value in the treatment of the bowel complaints of hot weather, not only diarrhoea, cholera morbus, and cholera infantum, but also malignant cholera,—in which, although the watery evacuations may be checked by opium and astringents, the cure cannot be regarded as complete until bilious discharges are established.

2. In febrile affections generally, such as are seen in our country, a laxative dose of calomel at the beginning of the attack adds to the comfort of the patient; and in the bilious remittent fever, of which we saw so much thirty years ago, and now see so little, purging moderately with calomel every day afforded to the sufferer a feeling of relief, and at the same time favored the remissions in which antiperiodics could be advantageously given. If I had the care of a case of remittent fever I should certainly administer calomel, not to arrest the disease, but to bring about an intermission in which quinine could be given. In intermittent fever it is seldom necessary, but doubtless there are cases in which it may be given with advantage.

3. Mercurials exert a happier influence than any other medicines in that condition of the system vaguely denominated “bilious.” This condition is marked by failure of appetite, indigestion, constipated bowels, and sluggishness of the intellectual faculties, and probably depends upon a failure of the excretory functions. The effete matters which ought to be removed remain as a clog upon the system, and mercurial purgatives promote their elimination.

4. Mercury, in minute doses, exerts a happy effect in some cases of dyspepsia. I believe the cases in which it is demanded are exceptional, the result, probably, of malarial poison; but I am sure that I have seen striking cures of this complaint effected by combination of mercury, after all the ordinary remedies for dyspepsia had been employed without effect.

5. Calomel appears to be eminently the remedy for infantile diseases, beginning with the jaundice of infants, and applying to nearly all the complaints incident to the early years of life. It is during this period of human life that mercurials can be administered with least danger, and at the same time that they are tasteless and are given in small bulk, they exert a control over the irritative affections of children which no other medicines exercise.

6. If the reputation of mercury as a remedy in inflammatory affections is on the wane, the weight of professional authority is still on the side of its antiphlogistic powers. In chronic inflammations especially it is held to exert a reparative influence—promoting the absorption of effused fluid, and causing the disintegration of inflammatory products of a low organization. But it may well be doubted whether it would be admissible to give it to the extent of inducing the cachexia necessary to avert the formation of such false membranes, even if it were an established fact that it possesses such a power. In all such affections I should give the remedy the benefit of the doubt, while I should certainly be very far from “pushing” it, as was the practice in the schools during my pupilage in medicine—when patients with every form of chronic disease lay for weeks with swollen faces and saliva streaming from their mouths.

7. As a sialogogue mercury ought to be discarded. Salivation is an evil *per se*, an

unmitigated evil, which it is the business of the physician to guard against during the employment of mercurials. The systems of children after full dentition are peculiarly impressible by this subtle agent, and it is among that class of subjects that the frightful ravages of mercury have been most generally witnessed. We cannot, therefore, be too careful how we give calomel to children after they have reached the fourth or fifth year of their lives. No physician who prescribes calomel to a child is excusable if he neglects to see that it has acted freely upon the bowels. The patient is never safe until that which may become a fatal poison has passed out of the system.

8. The enormous doses of calomel which it was fashionable to give, some years ago, are not only unnecessary, but may prove positively noxious by a severe salivation; for while the activity of this purgative is not at all in proportion to the quantity given, the danger of pyalism increases with the dose, especially if it be detained long in the system. Nothing is gained in the way of its cathartic action by doses beyond a few grains, or at most a scruple, and since the dangers are enhanced with the dose, that must be felt by all to be a salutary reform which has banished the herculean calomel practice.

9. In some forms of jaundice mercurials are of doubtful efficacy, and in others, dependent upon organic diseases of the liver, they are positively hurtful, and therefore not to be indiscriminately employed in this affection.

10. Mercury seems to be peculiarly deleterious in degenerations of the kidney.

In fine; while mercury must be deplored from the supreme position which it long maintained among our remedial agents, as a sort of catholicon, and must henceforth rank as of only secondary value in the management of febrile diseases, if any higher in the treatment of the phlegmasiæ; still, for the efficiency of its action in many of our well-marked diseases, as well as for its remedial powers in many obscure affections, it must unquestionably continue to be held one of the most precious of our curative resources. No doubt the reaction against mercury in the popular and professional mind has been salutary, as leading to a more discreet use of an agent capable of working great mischief. But, so far from being a medicine which the profession can afford to discard, it is one which exerts, in many states of the system, an influence more salutary than that of all others, and in some, effects changes which no other article of the materia medica has been found to bring about. It is therefore likely to stand its ground so long as men feel it necessary to invoke the aid of our benign art.

The Therapeutical Uses of the Passiflora Incarnata.

In a communication to the *Richmond Medical Journal* (July, 1867, p. 11), Dr. D. L. PHARES, of Newtonia, Mississippi, says of the *passiflora incarnata*:

I have used it in syphilis, but not in a sufficient number of cases to form a decided opinion as to its value. I never saw anything else act so promptly in erysipelas. I have used it with advantage in ulcers, neuralgias, and tetanus. I have seen wonderful effects from it in relieving tetanus; but, having no record of cases by me, I could not with propriety attempt to detail cases. I will merely mention one case from memory. Some ten years ago I was called to see an old lady in a distant part of the country, who was reported to be "having fits." I found her able to be up most of the time, but, while examining her, convulsions came on, affecting mainly the trunkal muscles and drawing the head back. I gave her instantly a dose of the *passiflora*. The convulsions subsided, and she has never had one since. I continued the use of the medicine, in small doses, for a few days. I have used it in treating tetanus in horses,—a disease usually considered as inevitably fatal to that noble animal. It has never failed to cure the horse. Let one case suffice

to illustrate. In 1851, early one morning, one of my horses was found to have trismus. A number of remedies failing, and the spasm becoming general, apparently affecting all the muscles,—tetanus erectus,—I abandoned him. He was down, his legs extended, and every muscle so tense as to be immovable by any force that could be safely applied. After some hours, at night, I concluded to try him with the passiflora; gathered a quantity,—stems, leaves, and flowers,—pounded, moistened with water, expressed ten or twelve ounces, and poured down his throat through a tube introduced at the side of the mouth. He was then apparently dying, and no one believed he could survive half an hour. I saw him no more till next morning, when he was well and grazing at a distance from the place where I had left him the night before. During the late war, my son, Dr. J. H. PHARES, had occasion many times to prescribe the passiflora for tetanus in horses, with one invariable result,—prompt, perfect, permanent cure. He fortunately saw no case in men.

The leaves are gathered in May, or as soon as the plant blossoms, but before forming fruit. In fact, the whole plant may be used. It must be pounded and the juice expressed through a strong cloth, into shallow glass or porcelain dishes. to dry as rapidly as possible in the shade, with free circulation of air. When dry, it is reduced to a powder by the use of mortar and pestle, bottled and closely corked. The dose of this powder is from one to four teaspoonfuls, repeated *pro re nata*. I have made ethereal, acetous, aqueous, and alcoholic preparations, and perhaps others; but the inspissated juice reduced to a powder is the best I have ever used. The size of the dose renders it somewhat objectionable. Some eight or ten years ago, I requested a manufacturing chemist of New York to prepare the concentrated active principle of the passiflora incarnata, which he promised to do; but he has never reported progress. If a concentrated solution could be obtained, I have no doubt it would supersede morphia and atropia for hypodermic medication, its action being so much more pleasant and safe. I have never seen the least unpleasant effect from it in any dose however large, although I have given it in quite large doses. When gathered later than May, the juice can never be sufficiently inspissated to be pulverized. It then contains too much sugar and gum. For external use, the whole plant may be boiled for an hour, then thrown out; and the extract thus obtained boiled down to a proper consistence for the object in view. For this purpose, the perennial roots answer well, gathered after the first frost in autumn.

The *incarnata* may be easily distinguished from the other species of passiflora. This and the *lutea* are the only two species found in the United States north of Florida. Three other species are found in Florida; but all these, like the *P. lutea*, are small, and bear fruit less than half an inch in diameter, while the *P. incarnata* is much larger, grows in the open fields, bears a fruit about the size and shape of the egg of the Muscovy duck, and has serrated trilobate leaves. From the sharp report emitted by the immature fruit when crushed, it is very generally called the *May-pop*.

The thick rind of the unripe fruit possesses very strongly the characteristic odor of the plant, and from it might perhaps be obtained a better extract, as in the case of opium from the immature poppy capsules. The ripe fruit is edible and harmless; but so are the seeds of the poppy, which are eaten by many persons with much gusto. I have never seen in any book any mention of this plant as a medicine. In 1629 it was first introduced into England as a green-house plant, and first figured and designated as the *P. incarnata* in Miss Lawrence's *Six Numbers of Colored Figures of Passion Flowers*, in folio, London. Several species found in the West Indies afford edible fruits, as the *P. maliformis*, *P. quadrangularis*, and *P. laurifolia*. The leaves of the last, we are told, are vermifuge. (*Labat, Nouv. Vog*) The *P. contrayerva* is said to be carminative and alexi-

pharmic (*Brown, Hist. Jour.*); the *P. lyrifolia*, cooling, aperient, diuretic (*Flor. Med. des Antill.*); the *P. foetida*, pectoral, antispasmodic, emmenagogue (*Pompée Desportes*). The *P. Murucuja* (the same, I think, called by others *P. rubra*), in syrup or decoction, is much used in Jamaica instead of syrup of poppies and laudanum. The flowers infused, or pounded and mixed immediately with wine or spirits, were thought to be "a very efficient and easy narcotic." In the *Annals of the Lyceum of Natural History*, I., (1825? my copy, with many other valuable works, having been destroyed by fire, I write from memory), is an interesting paper of some length, by Dr. Ricord, on the *P. quadrangularis*, the decoction of the root of which, the writer says, is a dangerous narcotic poison.

Since the foregoing was written, I have treated, with the fluid hydro-alcoholic extract of *passiflora*, obtained from the dried leaves by displacement, several cases of neuralgia, and one of sleepless, incessant motion and suicidal mania. With the same extract, during the current week, Dr. J. H. PHARES has treated, with the most prompt and satisfactory success, a very violent and hopeless case of tetanus, with opisthotonos, trismus, and convulsions, in a child two years old. Other most potent remedies, in heroic doses, having failed to produce any effect in this case, he thinks nothing but the *passiflora* could possibly have saved the child.

Remarks on the Uses of Bisulphite of Lime in Pharmacy.

W. S. SCOTT, F.C.S. (*Chem. News*, Oct. 11th), says: I have undertaken to lay before the British Pharmaceutical Conference in a few words, the results of some experiments instituted with the view of discovering a means of preventing the rancidity and decomposition to which various ointments and fatty preparations are liable, if kept for any length of time.

A series of specimens of freshly made spermaceti and other ointments, cold cream, bear's grease, and simple lard, were placed in similar pots and allowed to rest in a warm situation, a duplicate series to which a very small proportion of bisulphite of lime had been added, being put by the side of the first.

In the course of six or seven months, most of the first series had become more or less decomposed; they had an acid reaction and disagreeable odor, while those to which the bisulphite had been added remained absolutely fresh and sweet. In consequence, I now treat all preparations of fatty or oleaginous substances with a little of this salt applied in the form of strong solution, and have never yet found it to fail.

For ointments, a fluid drachm to each pound is sufficient to preserve them, while it has no injurious action whatever, and is quite compatible with the great majority of ointments—a remark that does not apply to the alkaline sulphites or bisulphites which have from time to time been brought forward for similar purposes.

Beef tea in hospitals may be prevented from turning sour by stirring in a few drops of bisulphite of lime in solution, and the same plan will enable us to keep jellies.

Clothes or matting soaked in the same solution and hung up, act as disinfectants, and have not the unpleasant odor of carbolic acid and chloride of lime. It may be used also for the preservation of anatomical preparations.

Bromide of Potassium.

The Berlin correspondent of the *British Medical Journal* (July 27th, 1867, p. 71), gives an account of the most important results of a series of experiments instituted by

Dr. EULENBERG and Dr. GUTTMAN, of Berlin, with the view of elucidating the physiological effects of the bromide of potassium. The following are the principal conclusions arrived at:

Bromide of potassium is, for warm- and cold-blooded animals, an intense cardiac poison, resembling other salts of potash in its mode of action. It exercises a directly paralytic influence on the excito-motory ganglia and the muscular substance of the heart. The heart, once arrested by its influence, does not recover, and quickly ceases to respond to mechanical or electrical irritation.

Bromide of potassium also acts as a powerful poison on the centres of motion, sensation, and reflex action, in the brain and spinal marrow. Of these functions, reflex action is the last to yield to its influence. After final arrest of the heart's action, chemical or electrical irritation of transverse sections of the spinal marrow in any part fails to produce muscular contractions in the extremities.

It has no *immediate* effect on the peripheral nerve-trunks and muscles; their irritability remaining unaffected long after motility and sensation are extinct, and after irritation of transverse sections of the spinal medulla has ceased to indicate muscular contractions; but, if its use be continued, it first lowers the irritability of the peripheral nerve-trunks, and then that of their intramuscular terminations, and that of the muscular fibres themselves.

The nerves and muscles of frogs, poisoned by bromide of potassium, have either entirely or nearly entirely lost their irritability twenty-four hours after death; whereas those of healthy animals, quickly killed, retain it even for feeble electric currents forty-eight hours or longer. Muscles immersed in a two percental aqueous solution of bromide of potassium cease to be irritable after a very short time, occasionally after five minutes. The same solution has a much weaker action on the transverse section of a nerve. An hour's immersion of the sciatic nerve is required before it loses its irritability. In all these respects, bromide of potassium exactly resembles all other potash salts in its physiological and toxic properties.

The bromine seems to be quite indifferent, as far as the effect of the drug on the heart and nerve-centres is concerned. This is evident from the negative results of injections with an aqueous solution of pure bromine, in the same or much larger proportions than the quantity contained in the dose of bromide of potassium employed in the first series of experiments.

Bromide of sodium is three or four times weaker than bromide of potassium, and does not kill under the symptoms peculiar to the potash salt. This agrees with the difference generally prevailing between the effects of salts of soda and potash.

The physiological effect of bromide of potassium on the nerve-centres is the most important point with regard to its use as a remedial agent. It confirms the empirical results which have gained for bromide of potassium a reputation in morbid conditions due to increased irritability of certain parts of the brain and spinal marrow, particularly of the medulla oblongata, as an agent of marked antispasmodic, anticonvulsive, and anæsthetic power. Hypnotic or narcotic properties it does not possess. Where its effects on the nervous system are in request, there would be no reason to fear the employment of larger doses than those generally in use, as enormous quantities would probably be required to produce poisonous effects in the human subject.

Hydrochlorate of Ammonia in Senile Gangrene.

The *Bulletin Thérap. de l'Aisne*, No. 8, says: The hydrochlorate of ammonia, as a sedative to the pains of senile gangrene, is a veritable novelty which comes to us from the

provinces. The fact is unique, it is true, but is its own confirmation, and thus deserves to be reported. A lady of 83 years suddenly experienced intolerable pains in the right foot, not yielding to opiate cataplasms. No trace of inflammation was found. The next day M. Ch. Gru noticed a general blue-black tint extending to the tibio-tarsal articulation, where a narrow border of rose color gave a distinct indication of the line of demarcation between the healthy and the diseased parts. The pains were more acute in the second and third toes, with no exterior manifestation of the cause of this difference. Foot entirely cold, though it felt to the patient as if devoured by fire.

In spite of the injection of 1 gramme of the gummy extract of opium, and of 5 grammes of laudanum, without counting the quantity employed in quite as large doses exteriorly, the pains persisted with increased violence. They wrung cries from the patient, whose altered features and livid face proclaimed death imminent.

At this juncture M. Gru thought of the hydrochlorate of ammonia with which he had succeeded in certain inflammatory engorgements, and he entertained a hope that he could (gangrene being admitted by coagulation of the blood in the capillaries) liquefy the coagulum and re-establish circulation. The diseased foot was then plunged into a pediluvium containing 250 grammes of the above-mentioned salt, and after two hours of immersion a notable alleviation took place. Fomentations with the same solution followed without intermission; for the pain reappeared as soon as the compress was removed. The patient had a good night, the normal heat and color returning by insensible degrees under the action of this topical application.

An incontestable proof of the accuracy of the diagnosis set up, is the subsequent dropping off of the second toe, leaving a wound resembling a black cherry with the skin taken off. Under cinchona dressings it healed. But a year after, the same precursory signs of gangrene reappeared at the same place, and were followed by a blackish phlyctæna midway of the external border of the foot. Underneath this phlyctæna was a spot of gangrene occupying the superficial layers of the skin. Now, the hydrochlorate of ammonia, employed at once internally and externally, triumphed immediately over these symptoms. Its sedative action upon the pains of senile gangrene is, therefore, indubitable.

To theorize upon the *modus operandi* of the ammonia in such a case would be useless. We must rest upon the fact itself without seeking to interpret it. But the case is different as to its employment in large doses in tetanus, which Dr. MacAuliff has brought into repute by four successful cases, since which another has just been reported by Dr. Bertheau. A contingent of five successful results in this so formidable neurosis, they being brought about by the same remedy, is itself worthy of notice. But the sweating which constantly followed the use of the latter is still more remarkable. Upon the ground that tetanic symptoms terminate (*se jugent*) by an abundant spontaneous diaphoresis—as it were an effort of nature to throw off disease—the English physician wishing to imitate that effort, prescribes, as a diaphoretic, every two hours, until the cessation of the symptoms, a tablespoonful of the following solution, viz.: water, 600 grammes; liquor ammoniæ, 15 grammes; sugar, 5 grammes. M.

In the case of idiopathic tetanus of M. Bertheau, it is in the dose of 8 grammes per day, in 400 grammes of the vehicle, that the ammonia has been administered; and that, during five successive days; then 5 grammes during eight days more—making 80 grammes in thirteen days—an enormous quantity most assuredly. Now, it is remarkable that from the day when the ammonia was administered—leeches, blisters, and antispasmodics having been previously used without effect—copious sweats set in, and the tetanic state, stationary for four days, progressively diminished till it ceased. (*Boston Med. & Surg. Journ.*)

Nitrite of Amyl in Angina Pectoris.

Upon the value of nitrite of amyl in angina pectoris, it is stated in the *British Medical Journal* for June 22d, 1867, p. 748 :

Nitrite of amyl has been attracting some attention here of late; and, if subsequent experience confirm the first results which have been obtained, this remarkable substance will ere long become officinal. Dr. Brunton, house-physician to the clinical wards of the Edinburgh Royal Infirmary, was led, from certain theoretical considerations, to think that the power which this substance possesses of lowering the arterial tension might prove useful in cutting short the paroxysm of angina pectoris. The results have fully answered the best expectations; for, in several cases in which the drug has had a trial, the spasm has almost immediately and completely been cut short, and the patient has passed into a state of perfect repose until the usual interval elapsing between the attacks has expired. It was Dr. Guthrie who, in a paper on the bodies of the amyl series, published many years ago in the *Journal of the Chemical Society*, showed that, when the vapor from a drop or two of nitrite of amyl is inhaled, it causes, in a few seconds, the most remarkable increase in the rapidity of the pulse, which often rises from the normal standard to 120, 140, or even 160 beats per minute. This increase in the pulse is, as Dr. Guthrie showed, accompanied by intense blushing of the face. All the symptoms disappear as rapidly as they commenced, and leave the patient perfectly well. Dr. Richardson has also investigated the physiological action of nitrite of amyl, and some remarkably interesting observations are to be found in his paper on the subject in the *Proceedings of the British Association*. The discovery of the fact that this most interesting substance is capable of affording relief in the most distressing of all the symptoms of heart-disease will, if confirmed, act as a fresh stimulus to those inquirers who would seek to ascertain the physiological action of the numerous bodies which the past researches in organic chemistry have called into existence.

Iodide of Potassium in Treatment of Cachexiæ.

In an article on the use of iodide of potassium by Sir HENRY COOPER, M.D., F.R.C.P., Senior Physician to the Hull General Infirmary (*British Medical Journal*, Sept. 28th, 1867, p. 264), it is claimed, that it is a specific in periostitis, as much as quinine for ague or arsenic for squamous skin diseases. In those cases of syphilitic and chronic rheumatism, the cachexiæ in which five grains ter die of the iodide does not succeed, from ten to thirty grains ter die are recommended. Numerous cases in illustration of the efficacy of large doses, when small ones have failed, are given.

Medicated Cocoa Butter.

PHILIP BRINGHURST (*Am. Journal Pharmacy*, July, 1867) recommends the following formula :

Yellow Wax,	. . . . .	4 oz.
Fresh Cocoa Butter,	. . . . .	28 "
Balsam Peru,	. . . . .	1 draehm.
Benzoic Acid,	. . . . .	1 "

Melt together, strain, and add oil rose, bergamot, oil bitter almonds q. s. to perfume pleasantly; when nearly cold add one ounce of glycerine.

Is used largely for sore lips, sore hands, mouth, nose, nipples, &c., and as a dressing for blistered surfaces.

Koumiss.

M. le Dr. EDWARD STAHLBERG (of Serga) read a treatise on *Koumiss* (fermented mare's milk), of which this is the substance :

1. The Kirguizes prepare the best koumiss.
2. The good action of koumiss in phthisis pulmonalis is not explained, save by the diminution of the secretion of the mucous membranes, and by the amelioration of nutrition.
3. Koumiss can be prepared, wherever the mares can find good pasturage and good water.
4. The disposition to phthisis can be combated completely with koumiss ; where the affection is in an advanced stage, its progress can still be checked, and often even a cure can be obtained.—*International Med. Congress, Gazette Hebdomadaire*, Sept. 13th, 1867.

Ointment for Pruritus Vulvæ.

R. Pure or Camphorated Lard,	60 grammes
Citrine Ointment,	3 "
M.	

Rub a small piece on the parts while in bed.

Should the pruritus resist this topical application, analyze the urine ; if glucosuria should be found to exist, add to the general treatment, M. Bouchardat's unguent—to wit :

R. Potass. Carbon.,	100 grammes.
Tinct. Benzoini,	50 "
M.	

M. Adrian's Formulæ for Tar Preparations.**EMULSION OF VEGETABLE TAR.**

R. Choice Tar,	10 grammes.
Yellow of one Egg, or,	15 "
Water,	75 "
	<hr/>
	100 grammes.

GLYCERINED TAR.

R. Choice Tar,	15 grammes.*
Yellow of one Egg, or,	15 "
Glycerine,	70 "

La France Médicale, Oct., 1867.

Oil of Juniper as a Diuretic.

Sir JAMES SIMPSON, of Edinburgh, spoke, before the British Medical Association, in terms of high praise of this oil inhaled as a vapor in promoting the flow of urine. He puts a teaspoonful of the oil of juniper into a vessel of hot water, and directs the patient to breathe the steam. This gentleman, who is so well known as an advocate of chloroform in midwifery, at the same time expressed it as his belief that a century will find the profession administering all of our remedies in the form of vapors.

* One grain equals 18 grammes.—EDITORS.

Concentrated Organic Remedies.

Under this heading, in the *Chicago Med. Examiner*, July, 1867, p. 385, Dr. PAYNE, of Marshall, Ill., speaks of gelsemin, caulaphyllin, lupulin, santolin, asclepin, and phyto-laccin. The properties these resinoid substances are said to possess, as well as the usual doses, are detailed with accuracy, and to one unacquainted with their use the article will prove interesting.

Spanish Saffron.

HENRY BIVORTO, of Chicago, presents an interesting paper upon this drug (*Crocus Sativus*, U. S. P.), its uses, commercial adulterations, &c., &c., in the *Chicago Med. Examiner* for June, 1867, p. 325.

Progress of Pharmacy.

The following notes on the progress of pharmacy we extract from the *Proceedings of the American Pharmaceutical Association*, at the fifteenth annual meeting, Sept., 1867 :

A new Source of Alcohol and Illuminating Gas has been made available by a company of scientific men in Austria, from the waste products of coal oil. The *alcohol* is obtained from the oil waste, and the *gas*, which is said to have four times the illuminating power of ordinary gas, is prepared from the distillery waste. Both can be obtained more economically than by any other process. A. D. Cir. xi, 161.

Utilization of Brine from Pickled Meat. A. Whitelaw, of Glasgow, proposes to separate the nutritive portion of brine from pickled meat, from the salt which is held in solution, by dialysis. The brine thus treated can in most cases be converted into a nutritive soup.

Moxa. Bretonneau prepares this cautery by mixing 40 parts charcoal, 3 p. nitrate of potassa, and 10 p. g. tragacanth, with 48 p. water to form a mass, which is rolled out and divided into little sticks 10 c. m. in length. When dry, they will burn readily without scintillation, produce very little ashes, and do not break readily. Ph. C. H., 1866. Ph. Zeit. Rus. v, 500.

Chloride of Zinc Cauterizing Paste, used in the London hospitals with success in the treatment of cancer, is prepared with the following ingredients: chlor. zinc 12 p., chlor. antimony 8 p., pulv. starch 4 p., glycerine q. s. J. Ph. et Chim., 1867. N. Rep. xvi, 251.

Judkin's Ointment, a preparation used extensively throughout the South and West, is prepared by boiling 1 lb. linseed oil in an earthen vessel, adding gradually $\frac{1}{2}$ lb. red lead, and finally stirring in half a drachm spts. of turpentine and one drachm sugar of lead. A. D. Cir. xi, 87.

Liquid Soap is recommended by Dr. A. Vogel, Jr., as a vehicle for many medicinal substances, to be applied locally, and it possesses as such many advantages. He prepares it by boiling together 100 p. glycerine, 32 p. oleine, and 17 p. concentrated solution of potassa, to which is subsequently added 3.5 p. carb. potass. dissolved in a small quantity of water; it may be perfumed with nitro-benzole. Thus prepared it furnishes a soap of the consistence of honey, which on standing a few days will settle perfectly clear, forming a slight deposit, from which it is readily separated by decantation. N. Rep. xvi, 65.

Glyconine. Mr. Edmond Siebel proposes to form this substance by triturating together 4 p. of the yolk of eggs, and 5 p. glycerine. It forms an unctuous liquid of the consistence of honey, which is recommended for local application and especially in the treatment of erysipelas and other cutaneous diseases, as it covers the surface with a soothing non-irritant varnish. Jour. de Ph. A. D. Cir. xi, 57.

Emulsion of Cod-Liver Oil. Dr. Rowland disguises the taste of cod-liver oil by the following formula: 100 p. cod-liver oil, 60 p. alcohol, sp. gr. 0.9396, and 3 p. *ess. pepper-mint*. It may be given in tablespoon doses.

Crème de Bismuth. The following formula is recommended by Dr. Boisliniere: 2½ drachms subnitrate of bismuth and 2 grains of carmine are rubbed with 2 ounces of *syrr. strawberries* and 2 ounces mucilage of gum. It is flavored with 30 drops *ess. of vanilla* and taken in teaspoonful doses.

Drops for the Prevention of Cholera. Dr. Levisseur recommends a mixture of tinct. arom. acid., ʒj; ether. acet., ʒij; spts. vini rectific., ʒj; camphor, quant. solv. potest. In time of cholera 2 to 4 drops to be taken on sugar at the least sign of illness. Ph. C. H. August, 1866.

Dr. Honigsberger, of Calcutta, has employed, with success, a mixture consisting of 1 ounce tinct. quassia, ½ drachm pulv. cloves, and 15 grs. crystallized protosulph. iron, for vaccinating as a preventive of cholera. Dr. Hager, who has tried it in over 600 persons, concludes that it may be valuable and is worthy of trial. It is applied in the same manner as vaccine virus. Ibid.

Pilulæ Metallorum et Amararum. Dr. Humphrey Peake has used pills of the following composition, with great advantage, in the treatment of intermittent fever, and all maladies arising from a deficiency in blood, and recommends them highly: Quiniæ sulph., ʒj, ferri redacti, ʒiiss, strychniæ, acidi arseniosi, aa grs. iij, conf. rosar. vel mucilag. acaciæ q. s. ut fiat pil. No. lx. A. D. Cir. xi, 61. A. J. Ph.

Anti-Cholera Pills, recommended by Dr. Hager, are prepared of the following ingredients: Quiniæ sulph., pulv. arom., aa ʒj; acid. hydrochlor., gtt. xv; ferri sesquichlor. sol., gtt. xx; rad. gentian. pulv., ext. trifolii, aa ʒij; ol. cinnam., gtt. x; pulv. althææ q. s. ut ft. pil. No. 120. Dose 2 to 3 pills. He advances the theory that persons are only affected by cholera if their blood is in an abnormal condition, and therefore recommends the administration of quinia and iron. Ph. C. H. July, 1866.

Syr. Phos. Iron, Quinia and Strychnia. Aitken's formula is as follows: Precipitate a solution of 5 drachms protosulph. iron in 1 oz. boiling water, with 1 oz. phosph. soda in 2 oz. boiling water, and wash the resulting precipitate. Then precipitate 192 grs. sulph. quinia from its acid solution with aqua ammoniæ, and wash the precipitate. Dissolve the washed precipitates, together with 6 grains of strychnia, in 14 oz. dilute phosphoric acid, filter, and dissolve in the filtrate 14 oz. of sugar, without heat; strain.

Mr. Charles Bullock recommends a modification in the manipulation, which consists principally in the separate solution of the phosphate of iron and the alkaloids in the dilute phosphoric acid. A. J. Ph. xxxix, 177.

Dr. Lyons recommends this syrup as a most powerful tonic combination. A. J. Med. Sc. cv, 131.

Tincture of Lycoperdon. The dusty powder of *lycoperdon bovista* appears to possess anæsthetic properties, and has lately come into use in the form of tincture. Cramer prepares it by macerating 4 Troy ounces in 4 fluid ounces of water for 24 hours, then

adding 12 fluid ounces of alcohol and macerating for one week. It is a dark reddish-brown liquid, which may be given in teaspoonful doses. A. J. Ph. xxxix, 113.

Eupatorium (nervosum?), commonly called bitter bush, is indigenous to Jamaica, where it has acquired considerable notoriety of late as a powerful stimulant to the action of the heart. It is employed extensively in typhus and typhoid fevers, in the form of tincture and decoction. Brit. Ph. Conf., 1866. Ph. J. Trans. viii, 222.

Arsenicum. Frank has experimented on the various tests for arsenic, as proposed by Fresenius and Babo, Marsh, Reinsch and Rieckher, and has found that the method of Fresenius and Babo afforded the least, that of Marsh the most delicate reaction. Viertelj. Ph. xv, 602.

Poison-Bottles. By Aug. Theod. Moith. Among the many contrivances to prevent taking hold of a poison-bottle instead of another, I found almost all inconvenient in the routine of the store.

The mode I hereby present gives all the security aimed at, without disturbing the symmetry of the store, or needing any recourse to poison-cases, nooks or corners, or creating any apprehension in the mind of the observing customer.

Put a few ounces of finely powdered asphaltum in a pint of benzole (not to be confounded with benzine), stopper well, shake occasionally for a few hours, and with a camel's-hair brush paint smoothly this varnish over the neck and shoulder of the bottle. It will dry in ten or fifteen minutes, and produces a fine black varnish, which can be washed.

It will be impossible, in taking hold of such a marked bottle, not to notice the difference, and oblige the dispenser to look once more at the label.

This varnish serves also as an excellent paint for the whole bottle or jar whose contents ought to be kept dark, and from transmitted light.

"*Mata*." By E. S. Wayne. This herb, called "*mata*" by the Mexicans, is in common use in New Mexico, as an addition to tobacco in smoking. A small quantity of it is rubbed to a coarse powder in the palm of the hand, and then mixed with the tobacco, to which, in burning, it imparts a very agreeable odor, and at the same time prevents or corrects the disagreeable odor of stale tobacco smoke upon the clothing, and in apartments.

It was introduced into use here by Major McCrea, U. S. A., and since has become quite in demand by smokers (those who use the pipe). I have had much difficulty in obtaining any quantity of the article, and then only at an enormous cost. I was fortunate enough this season to obtain a quantity of the seed of the plant, and have been successful in growing a crop, specimens of which are herewith sent, also some of the seed. The plant is rather insignificant in size; the inflorescence is very minute, white, corolla entire, and finely cleft. I have not been able to make out its natural order, or to find a description of it in any work at my disposal. It is not described in the Pacific Railroad Survey (in the botanical section of that Government report).* The odor, when burnt in a pipe, is similar to that of the tonqua bean, and I presume it owes the same to the presence of coumarin in the plant.

* At the request of Professor Wayne I have examined the specimens sent. The seeds consisted of the empty involucre and the achene (with the pappus much broken) of a *Eupatorium*. The dried plant was without flowers, but bears a striking resemblance to some of our Northern species of this genus, and corresponds closely with the description of *Eupatorium incarnatum*, Walter. This species is indigenous to Texas, but is found as far east as Florida and Georgia. J. M. MASON.

Oxalate of Iron. Among the volunteer reports to the *Am. Pharm. Assoc.*, was one by Mr. G. G. Simms on this article. He says:

I can safely say that oxalate of iron has been constantly used as a medicine in the District of Columbia during the last ten years.

Of its medical and chemical properties I will let Dr. Schaeffer speak, who was the first to employ it.

"In answer to your inquiry, I send the following particulars in regard to the introduction of the oxalate of iron into medical practice. In the month of May, 1854, I had been using the 'Pulvis ferri.' I had found certain objections to it which I thought might be obviated by the use of a pure oxide of iron for reduction. In looking about for such a pure oxide, easily and cheaply prepared, I found no one answering all ends so well as that produced by the process of Vogel. This consisted in precipitating a solution of ordinary protosulphate of iron by oxalic acid. The filtered solutions exclude all insoluble matter, and the precipitated oxalate is nearly insoluble in the remaining free sulphuric acid. It needs but sufficient washing and subsequent drying to obtain the oxalate in a state of purity and of constant composition. This salt gently heated, with exposure to the air, takes fire, or may be kindled, and then continues to burn until the whole becomes converted into impalpable peroxide of iron. This cheap, rapid, and perfect method of obtaining a perfect oxide of iron, free from all grit and eminently fitted for all the finer polishing purposes, had led to the use of this article for polishing the finest optical glasses in the most renowned European establishments. It may be remarked, by the way, that by heating the product to a higher temperature, a much harder substance may be obtained, useful rather for grinding than for polishing purposes. By adding salts of alumina, chromium, and other similar salts to the iron solution, we may obtain in the final result,—using sufficient heat,—products nearly, if not quite, equal to emery, and of extraordinary fineness.

"Having obtained the oxalate and examined its properties, it at once occurred to me that this salt itself would be an excellent form, by means of which, to introduce iron into the system. It was a proto-salt, unalterable, cheaply made and quite pure.

"The soluble proto-salts of iron are too astringent and liable to rapid alteration. Even the less soluble salts undergo the change so quickly that they must be protected by some extraneous substance, intermixed or coating their preparations.

"Struck with these obvious advantages, I commenced to use the salt myself. Being so very insoluble, I placed the dry powder upon the tongue and washed it down with water, and I believe that, in the extended use which has since been made of it, this is still the favorite mode of administration. I soon found that, in doses of two to three grains thrice a day, all the tonic effects of iron were more rapidly produced upon the system, than by any ordinary dose of the iron preparation which I had used. It was quite easy, by increasing the quantity, to stimulate the capillary circulation to the extent of producing an itching over the whole surface of the body. Instead of being astringent, with inactivity of the bowels originating from want of tone, it soon produced healthy and natural passages. The prolonged use of this oxalate will, however, give rise to a peculiar kind of astringent action which should be taken into consideration.

"Having thus satisfied myself that the oxalate of iron would prove a useful article of the *Materia Medica*, it was communicated to some of my medical friends, and ever since then it has been in constant use in this city."

III. ANÆSTHESIA.

The Administration of Chloroform.

Dr. C. N. ANDREWS read before the St. Louis Medical Society a paper on the administration of chloroform (*St. Louis Medical Reporter*, June 15th, 1867, p. 229). He expresses the fear that mankind will be deprived of the benefit of the "greatest achievement of medical science in the present century," through groundless apprehensions of dangers from the effects of chloroform.

He gives the following prerequisites to safe and successful anæsthesia. First, the administrator should feel himself master of the situation, and the patient should not suffer from fear or excitement. There should not be a crowd of persons standing around and gazing upon the patient. The patient should not have a full stomach, or loaded, constipated bowels, as chloroform, like other narcotics, interrupts the processes of digestion, and abhors a mass of fermenting ingesta and a load of fecal matter in the bowels, holding, through the reflex sympathies, high carnival through the nervous system. The patient should occupy a lying position, and if partly on one side the better. At first, the chloroform vapor should be well diluted, and given slowly, till it has had time to permeate gradually every part of the system, and the various organs have had time to accustom themselves to its effects. The system needs to be saturated with it in every part, but safety requires that this should not be done too rapidly. The physiological changes of blood, and tissue, and function, upon which chloroform narcotism depends, cannot be rapidly produced without hazard. We should not lose sight of the fact that we are administering a *narcotic*; that it is narcotism mainly that we desire to produce; and that we have not only to give a sufficient quantity, but that we must give the organism sufficient time to go to sleep. We can paralyze and asphyxiate in a very short time, but true narcosis cannot be produced so quickly. When we have given time for all excitement to subside, and the system time to accustom itself to the first effects of the vapor, and to establish an equilibrium in its effects through the system, say from two to five or ten minutes (or even longer, if there is an obstinate resistance of the system), we may then increase the strength, and give it as fast as the functions will allow. If any of these become irregular or interrupted, we must withdraw the vapor for a moment, or lessen its strength, and then let them right themselves. The point to be attained is, to keep the organic sensibilities awake (or alive rather, for these sensibilities do not sleep, they only live or die) while we put the animal sensibilities to sleep.

The condition of the orbicularis oculi muscles is a valuable index. At first they seem to contract with a vibratory action, and give the eyelids a corrugated appearance; and there is also a more or less rapid effort at winking with the eyes closed. As narcosis supervenes this motion subsides, and these muscles become quiet and completely relaxed, giving the eye a hollow, sunken appearance.

A person in a complete anæsthetic state should lay as though in a profound sleep, and not as though stunned from a heavy blow upon the head, or had apoplexy. When administering chloroform we should not asphyxiate our patients by depriving them of atmospheric air. When they are half narcotized, it is not a very difficult thing to do this by a too close application of the napkin or sponge. They need just as much air at this time as at any other, and their safety requires it. A space of an inch to an inch and a half should be allowed between the face and cloth. It is only necessary that the atmos

phere inhaled by the patient should contain from two to three and a half or four per cent. of the anæsthetic vapor. But the question may here be asked: What appliances should be used, and how can we regulate the strength of the vapor? Having at first used several kinds of inhalers, I long since abandoned them all for the exclusive use of the linen pocket handkerchief. It is the most agreeable to the patient, the most convenient and the safest. The expired breath should not, if it can be avoided, be directed upon it; and if the vapor is administered any length of time, it should be occasionally changed, as it soon becomes impure from the breath and changed chloroform. The strength of the vapor may be regulated with sufficient accuracy by the quantity poured at a time upon the handkerchief, the immediate effects upon the patient, and by occasionally putting the handkerchief to our own nostrils, and bringing our olfactory sense to our aid. By a little practice in this way we can soon very expertly regulate the strength and effects of the vapor. A too concentrated vapor produces either, firstly, a choking, or later, a stunning effect, with more or less distress pictured on the countenance, whereas a vapor of suitable strength produces a more quiet, placid somnolency.

The history of the mortality from chloroform shows that the danger is almost entirely from its primary effects, and not often from any secondary or too profound anæsthetic effect. We therefore see that the danger is not so much in the anæsthesia as in the primary effects of the anæsthetic vapor, and we also see that safety requires quite as much, if not more, caution and skill in carrying a patient through the first stage of chloroformization as through the anæsthetic stage. These considerations have enabled me to give chloroform in many hundred cases without in any instance having had any unfavorable occurrence.

I will note only a few other points that should be regarded:

When we give chloroform, our eyes should never leave the patient for one moment till consciousness is restored.

The more robust the patient the longer time it will take to produce acquiescence. Children bear chloroform well. Drunkards do not. Summer temperature will vaporize nearly twice as much chloroform as a winter temperature. Shocks from injuries are no bar to its being given if it be gradually administered. Except in dilated, flabby hearts, fatty degeneration, or aneurisms near the heart, I know of no conditions of any organs or tissues of the body which contraindicate its use. I have administered it in cases in which peritonitis, pleuritis, pneumonia and cephalitis in various stages and degrees were present, and its effects never proved deleterious, but generally rather palliative and beneficial than otherwise.

Of ether, Dr. Andrews says, it is uncertain in quality and effect. It excites, it strangles, and to some persons it cannot be administered at all. It dissolves to a great extent the corpuscles of the blood, and frequently leaves the patient in a prostrated condition, which generally lasts for some time. It may be safer than chloroform for this reason, that the system rebels against it so strongly that it would require twice the time and twice the skill to introduce a fatal quantity that it would of chloroform.

Death from Chloroform.

Prof. JOHN T. HODGEN, M.D., of St. Louis, communicates to the *St. Louis Medical Reporter*, for October 1st, 1867, p. 477, the following details of a death from inhalation of chloroform, the fourth case occurring in St. Louis from the same cause:

It becomes my duty to record another death from the use of chloroform as an anæsthetic agent—the first I have ever witnessed—and I think the fourth case of the kind

that has occurred in this city since it has been presented to the profession for that purpose. Jacob Wilhelm, aged 59, a native of Germany, of original robust constitution, but who had suffered much during the past seven years from stone in the bladder, presented himself to me two weeks ago asking to be operated upon. At that time, though we found stone, it was thought prudent to put off the operation a short time, since he was suffering from malarious fever, and the weather was very hot. Yesterday (September 24), however, his general condition having sufficiently improved, he was, at 10 o'clock A. M., brought to the operating-room of the St. Louis (Sisters') Hospital, and was placed upon the table for the purpose of having the operation of lithotomy performed. In the presence of some thirty medical men and students, assisted by Drs. Gregory, Dudley, Jung-hans, and others, chloroform was administered in the usual way, viz., a drachm of chloroform was poured into a conically folded napkin, and the patient allowed to breathe from it; of course, inhaled in this manner, it is largely mixed with air. He was announced under its influence, and I made the first incision in the perineum. In searching for the staff, the patient seemed not well under the influence of the chloroform; a little more was added to the napkin, and he took two additional inspirations, when his condition was announced as critical by the attendants. Efforts were immediately made to resuscitate him by dashing cold water in the face and on the chest, violent spanking, striking the chest, and pressing the abdomen; and finally, by opening the windpipe and introducing a large catheter, fresh air was forced into the lungs and endeavors made to produce artificial respiration. These efforts were continued for over a half hour, but did not elicit the slightest response, and the patient succumbed almost instantly.

Ether versus Chloroform.

It is stated in the *British Medical Journal*, for July 20th, 1867, p. 48, that Lyons is the only city in France, and Boston in the United States of America, where chloroform is laid aside and ether preferred as an anæsthetic. A death having taken place this summer at Lyons, in a woman of delicate constitution, under anæsthesia, while an orthopædic apparatus was being adjusted to her foot to correct some deformity, the fact gave occasion to a discussion at the Academy of Medicine in that city. It then appeared that, since the resolution had been come to, under a certain predominance of opinion, to adhere to the use of ether, no less than seven deaths had occurred under anæsthesia at Lyons; whereas, in Paris, during the fourteen years that chloroform has been in use, over a much wider range of cases, the same figure expresses the total number of casualties, for they have been no more than seven.

Dr. Richardson on the Bichloride of Methylenes as a General Anæsthetic.

Dr. RICHARDSON, in a private lecture, delivered October 8th, on this subject (*British Medical Journal*, October 19th, 1867, p. 345), said that it was still necessary to find some general anæsthetic which should be safer than chloroform, inasmuch as there were, in many cases, moral objections in the way of using local anæsthesia, however perfectly it might carry out the surgical indications. Patients were often averse to knowing that something was being done to them; and, again, the hearing by the patient of any remarks made by the operator to his assistants sometimes had a bad effect. Dr. Richardson had, therefore, made a number of researches on the substances allied to chloroform; and on

the present occasion brought forward the bichloride of methylene as most nearly fulfilling the objects sought for.

The lecturer explained briefly the arrangements by chemists of organic compounds in series—the methylic, ethylic, propylic, butylic, amyllic, &c.; and pointed out that the distinguishing feature of these compounds was the presence of carbon combined with hydrogen or some other element. He called special attention to the methylic series, being compounds of the organic radical methyl (CH_3). This, combined with hydrogen, chlorine, iodine, &c., gives marsh-gas (CH_4); chloride of methyl (CH_3Cl); iodide of methyl (CH_3I), &c. He also pointed out how new substances were formed by the substitution in some member of the series of one element for another: thus, starting with chloride of methyl $= \text{CH}_3\text{Cl}$, by substituting an atom of chlorine for an atom of hydrogen, there is formed bichloride of methylene $= \text{CH}_2\text{Cl}_2$. By again substituting an atom of chlorine we get chloroform $= \text{CHCl}_3$. And, finally, by replacing the remaining atom of hydrogen by chlorine, there is formed tetrachloride of carbon $= \text{CCl}_4$.

Thus bichloride of methylene, chloroform, and tetrachloride of carbon, are consecutive members of a substitution series. All possess anæsthetic properties; but they differ in certain physical qualities, which have a bearing on their anæsthetic action. Bichloride of methylene boils at 88° Fahr., and has a specific gravity of 1.34: chloroform boils at 142° , and has a density of 1.49; tetrachloride of carbon boils at 172° , and its density is 1.59.

Dr. Richardson observed that the late Dr. Snow had propounded a theory that anæsthetics produced their effect by interrupting oxidation in the body, founding this idea on the fact that the vapor of chloroform instantly extinguished a lighted taper. Dr. Richardson, however, showed that, while this effect was produced by chloroform and by tetrachloride of carbon, a taper plunged into bichloride of methylene—a compound containing more hydrogen than the others—set fire to the vapor. This, he said, was an objection to Dr. Snow's theory.

Bichloride of methylene (of which specimens were handed round for examination) is a fluid closely resembling chloroform in general appearance and in smell, but differing, as already mentioned, in certain physical properties. When inhaled, it produces anæsthesia more slowly than chloroform; the anæsthesia, however, lasts longer, and complete recovery is more rapid. As far as Dr. Richardson had been able to judge from experiments on animals, its inhalation is less likely to be followed by death than that of chloroform; and the retention of muscular irritability after death is of much longer duration. When it produces death, the circulation and respiration appear to cease nearly at the same time—the respiration somewhat sooner than the circulation.

To show the relative effects of bichloride of methylene, chloroform, and tetrachloride of carbon, Dr. Richardson placed three pigeons in glass jars, and caused each of them to inhale the vapor of one of the above-named anæsthetics. The pigeon to which chloroform was supplied was the first to become insensible; on being removed, and placed on the table, it gradually recovered in a few minutes. The bichloride of methylene was longer in producing anæsthesia; but the duration of the insensibility was longer, and the animal recovered more suddenly than the other. The production of anæsthesia with the bichloride of methylene appeared to be attended with less acceleration of the respiration than when chloroform was used. The animal treated with tetrachloride of carbon remained unaffected for a much longer time than the others, owing to the high vaporizing point of the compound and the coldness of the atmosphere. The vapor, when it at last began to act, produced some sickness, which was followed by anæsthesia.

In concluding, Dr. Richardson said that the bichloride of methylene, like chloroform

and tetrachloride of carbon, produced sickness. This was, as far as he could see, the only drawback to its use. It might be possible at some time to discover an anæsthetic which should be free from this objectionable property. Such a body must be sought for among those having, like the bichloride of methylene, a low boiling-point, and a comparatively low specific gravity.

The Action of the Tetrachloride of Carbon.

Dr. ARTHUR ERNEST SANSOM, of London, late House-physician and Physician-ac-coucheur's Assistant to King's College Hospital, in an article on tetrachloride of carbon (*British Medical Journal*, Sept. 7th, 1867, p. 206), comes to the conclusion that it is not the *summum bonum* of an anæsthetic.

So far as its earlier stages are concerned, it is all we want; it is stimulant, anodyne, hypnotic; and it produces no adverse sign. But for the anæsthesia necessary for the performance of surgical operations, as well as for any prolonged employment, I consider that it is altogether undesirable. The accidents of its physical condition, its ponderous vapor, its insufficient volatility for the system readily to disembarass itself of it, are so many reasons for its non-employment in anything like large doses.

The question occurs: Can we take advantage of its stimulant power upon the heart, and its tendency to increase rather than diminish muscular action, without allowing it to exert its profounder influence? And can this coexist with a perfect anæsthesia? Inasmuch as these tendencies of the tetrachloride directly antagonize the tendencies of chloroform, I have made a number of experiments on animals with a mixture of the two.

The conclusion to which I have come from my experiments has been, that the greater the proportion of the tetrachloride, the greater the tendency to spasmodic jerking inspiration, and the greater the tendency to a deepening of the narcosis after removal from the atmosphere. A small proportion of the tetrachloride seems to me to lend safety to the action of chloroform. On this point we want further experiments; but I think we shall find a mixture of one part of tetrachloride of carbon in six of chloroform a safe, as it certainly is an agreeable, anæsthetic. If any gentleman should obtain practical experience of this compound anæsthetic, I should be thankful if he would communicate his results to me.

The Tetrachloride of Carbon as an Anæsthetic.

Dr. PROTHEROE SMITH resumes, in the June 1st number of the *London Lancet*, the consideration of this important agent.

After giving the various chemical features and formulæ, its *modus operandi* is demonstrated by the recital of various experiments upon animals, which seem to prove that tetrachloride of carbon is a powerful anæsthetic; that consciousness is rapidly restored after its use, if not pushed beyond a certain point; that on account of the heaviness of its vapor, it should be administered in moderate quantities; that when pushed, in its administration, to extremes, it seems to destroy life by causing arrest of the circulation of blood through the lungs,—a distended condition of the right side of the heart,—an insufficient supply of blood to the left side of the heart, and a consequently diminished systemic circulation.

Dr. Smith having obtained from the laboratory of the Royal Institution a specimen of tetrachloride of carbon, manufactured by Messrs. Hopkin & Williams, about half a drachm, on a handkerchief, was inhaled. Its vapor was found to be agreeable, having a

delicate perfume, similar to that of quince, and imparting at first a sensation of coolness to the throat, similar to that experienced in drawing in one's breath after taking peppermint, followed by a feeling of warmth on the surface of the body generally.

This was succeeded by a feeling of calmness and freedom from the exhaustion which had previously been felt, and which did not return during the remainder of the day; and sleep that night was unusually sound.

The experiment was repeated on the following day with similar results.

On March 23d, having obtained a perfectly pure specimen of the fluid, twenty minims on a handkerchief were inhaled, repeating the dose when it had evaporated.

Its anæsthetic effects were very rapid, preceded by an agreeable sense of drowsiness, &c., and other sensations which Dr. Smith had experienced from the inhalation of chloroform, but in a less degree, and giving place, in about two minutes, to calm sleep, after which scarcely a minute elapsed before the return of complete consciousness.

Sleep was again calm and undisturbed through the succeeding night.

In experiments upon insects it was found, that whereas chloroform, when dropped on their heads, was quickly fatal, they soon recovered when the tetrachloride was employed in like manner.

Dr. PROTHEROE SMITH continues the consideration of this subject in *The Lancet*, June 8th, 1867, by the recital of a number of cases in which the indication was only to relieve pain or irritation.

The mode of administering the tetrachloride, when it was desired to relieve pain or irritation of the mucous membrane only, was to sprinkle from twenty to thirty minims on a handkerchief held in the hollow of the hand in close contact with the nostrils and mouth, and repeated as required by the evaporation of the fluid, till relief was obtained. But on the occasions when a longer anæsthesia was necessary, it was administered by Dr. Smith's inhaler, which requires only one-fourth the amount above mentioned of the anæsthetic to produce its effects.

Dr. Smith claims that he has used this inhaler upwards of twenty years, without its being followed by a fatal result or an alarming symptom, which he ascribes to the fact that a small quantity of the anæsthetic being vaporized, the limit of perfect safety is less liable to be exceeded.

We select the following cases :

Female, aged 33; robust. Wished to compare its effects with those of chloroform, which had always induced sickness and hysteria. Inhaled twenty minims of the tetrachloride on a handkerchief, which, in a minute, gave quiet sleep, succeeded by a sensation of repose, continuing several hours.

Female, aged 38; subject of nervous depression; feeble heart; dysmenorrhœal pain. Accustomed to stimulants. Pain from gum boil. At first she rambled incoherently, then was quiet and free from pain; asleep in two minutes.

No unpleasant symptoms followed. On a former occasion, when this patient took chloroform by inhalation, dangerous symptoms of asphyxia occurred, from the effects of which she did not wholly recover for several days.

The tetrachloride was repeated a week afterwards, without recurrence of incoherence.

In *The Lancet*, June 29th, 1867, Dr. PROTHEROE SMITH narrates a number of other cases, which, in his opinion, justify the belief that the tetrachloride of carbon, carefully administered, will be found useful in removing pain, especially headache, dysmenorrhœal distress, tic douloureux, toothache, &c.; that it will be a valuable and safe means of mitigating the sufferings of labor, without apparently hindering the natural efforts; in some

cases, of inducing quiet sleep, and of removing, for a time, the effects of exhaustion of the nervous system.

Its vapor, acting locally, seems to have been beneficial in alleviating the distressing irritation of "hay fever" in the few cases in which it has been tried.

In one case,—a gentleman who was a martyr to hay fever,—more than a week elapsed after the inhalation of the tetrachloride, with no return of the ailment, although he has frequently, in the meantime, been in hayfields and hop kilns, both of which had heretofore invariably produced it.

When the tetrachloride was used *per vaginam* it exerted a soothing influence and relieved pain.

Like all anæsthetics, if recklessly used, it might destroy life; yet, carefully managed, it may, with impunity, be employed to induce complete anæsthesia.

In the majority of instances there has been no nausea nor sickness following its use, nor any unpleasantness from contact with the skin or mucous surfaces; while it has been often observed that the relief from pain obtained by it continues after its immediate anæsthetic effects have disappeared.

It is pleasanter to inhale, producing anæsthesia with a less amount of previous muscular spasm and rigidity than does chloroform.

It is much less liable to decomposition by light than is chloroform. Its vapor being heavier and less volatile, is more slowly eliminated from the system; yet its effects upon the perceptive faculties seem to be more evanescent, consciousness usually returning in a few moments after the cessation of inhalation. And when profound sleep is not induced, and consciousness not even interrupted, pain and muscular power may be suspended.

In midwifery, when administered in small quantities, it lessens pain, without apparently interfering with the natural process of labor, and a much smaller amount of the fluid is necessary than of chloroform.

Styptic Collod: A New Styptic and Adhesive Fluid.

B. W. RICHARDSON, M.D. (*Med. Times and Gaz.*), says: The process of the manufacture of the fluid is tedious, but sufficiently easy. The object to be aimed at is to saturate ether entirely with tannin and a colloid substance, xyloidine or gun-cotton. In the first step of the process, the tannin, rendered as pure as can be, is treated with stronger alcohol, and is made to digest in the alcohol for several days. Then stronger ether is added until the whole of the thick alcoholic mixture is rendered quite fluid. Next, the gun-cotton is put in until it ceases readily to dissolve.

The solution is now ready for use. It can be applied directly with a brush, or mixed with equal quantities of ether; it can be applied in the form of a spray. I have called the fluid "styptic collod."

Properties.—When the solution is brought into contact with an open surface of the body, the resultant phenomena are these: the heat of the body gradually volatilizes the ether and alcohol, and the tannin and cotton, as the ether leaves them, are thus left stranded on the surface in intimate combination. In proportion as the ether passes off, the blood or the secretion of the surface permeate the tannin and cotton; but tannin acts directly upon albumen, coagulating it, and transforming it into a kind of membrane, almost like leather. The cotton meanwhile unites the whole, gives substance to the mass and adhesive quality. When all is solidified, the dressing becomes, in fact, a concrete, having a true organic hold or basis on the tissue, and as the tannin, if the solution is freely applied, is in excess, any new exudative matter or blood is for several hours taken up by it,

and the annealing is made more complete. Thus by this dressing, the air is excluded from every possible point in every possible direction, not by a mere septum, but by the combination of the animal fluids with the remedy, and because the air is excluded and fluid is absorbed, there is no decomposition, and because there is no oxidation there is no irritation.

The styptic and adhesive qualities of this fluid are easily demonstrated by observing its direct action on blood, on serum, on pus, and on albumen. You will see that it solidifies all these by mere contact with them.

To these properties I must also add that of complete deodorization. Here is putrid blood; here putrid ovarian serum; here putrid purulent substance. They are unapproachable when laid on an open surface, but we bring them into contact with the solution, and they are deodorized. Further, the decomposed substance is fixed by the tannin and rendered inert.

Observations on Benzoinated Ointments and Cerates.

By C. S. EBERLE (American Journal of Pharmacy, July, 1867).

Since the introduction of benzoinated, populinated, and similarly treated cerates and ointments, their application has met with widespread favor, and it became desirable to determine how far they might be therapeutically affected by the admixture.

During the past year my attention was considerably directed to the determination of the query, and the subjoined remarks are offered in support of the assertion that, while rancidity in an unguent may defeat the purpose of its creation, and often do harm by the irritation it produces upon sensitive surfaces, the benzoinating process, under proper restriction, prevents the sensible properties of the same from modification or change, without in the least affecting its therapeutic action.

When the unguents containing lard were prepared extemporaneously, that benzoinated, by furnishing the hog butcher with a quantity of tincture of benzoin of the strength of four Troy ounces to one pint of stronger alcohol, to be incorporated in the proportion of one fluid ounce to each pound, while the fat was still fluid and warm, and well stirred to expel the spirit, was used. In other instances balsam of Peru was added in the proportion of six drops to each ounce of dark colored, and three drops to the same quantity of those of light hue. This addition can best be made at the point at which the cooling fluid will sustain the balsam upon its surface, dropping it upon the centre, and stirring slowly at first with the point of the wood spatula, gradually incorporating it with the mass.

Where this care is not observed the mass is disfigured with minute dark specks, and should the addition be made before the point in cooling mentioned is reached, a separation of constituents is effected, and collects as a resinous globule in the bottom of the vessel, and cannot afterwards be properly incorporated.

The process was applied to most preparations, officinal and otherwise, which in the course of business would suggest its use. They were dispensed at varying intervals, kept indefinitely well, and upon inquiry instituted as to their behavior therapeutically, confirmed the supposition of their properties being unaltered by the combination.

Pharmaceutical Formulæ.

The following formulæ are given in the *Am. Pharm. Journal*, compiled from various French journals.

Pennès Antiseptic Liquid.—Bromhydric acid, 2 parts; pure phenylic acid, 8 parts. Mix in a porcelain capsule, placed in a sand or steam bath, and stir with a glass tube. When the combination is effected, fill in small glass-stoppered vials.

Vulnerary Ointment (*Guerit-tout des Anciens*), by M. PERRET.—Arnica flowers 50 parts; flowering tops of St. John's wort, 25; of vervain, 15; lard, 800 parts.

Antispasmodic and Antineuralgic Pills of M. RAYER.—Extract of valerian, assafoetida, galbanum, castor, of each, one gramme. Make into 18 pills, of which one is to be taken three times daily.

Confection of Cinchona and Sulphur in Chronic Bronchitis, by Dr. DE SMET.—Powdered cinchona, flowers of sulphur, of each, 10 grammes; syrup of marsh-mallow, q. s. If there is no tendency to diarrhoea, the cinchona is reduced one-half. Dose: A coffee spoonful four times a day, to be continued for two or three weeks.

Application for Neuralgia, by Dr. GRAY.—Tincture of aconite, chloroform, of each, 5 parts; lard 20 parts. Mix. After applying the ointment, the place is covered with cotton.

Colombin in Dyspepsia, by WITTSTOCK.—The alcoholic extract of colombo is treated with water, and agitated with an equal volume of ether. The ethereal solution is drawn off; the greatest part of the ether distilled off; the last allowed to evaporate; the crystals are washed with cold ether, and dried. Dose: Five to fifteen centigrammes a day.

COPLAND'S Compound Confection of Cinchona.—Powdered Calisaya bark, 80 parts; confection of rose, 15 p.; dilute sulphuric acid, 3.75 p.; ginger syrup, 45 p. Dose in intermittent fever, four to eight grammes three or four times a day.

Chloroform Water (*Eau Chloroformée*).—Distilled water, 200 grammes; chloroform, 2 grammes. Agitate well. For external application in cephalalgia, besides sinapisms.

Odontalgic Drops of Righini.—Alcohol, 8, creasote, 12, tincture of cochineal, 4 grammes; oil of mint, 6 drops. Mix.

Odontalgic Drops of COPLAND.—Opium and camphor, of each, 60 centigrammes; alcohol, q. s. (?) to dissolve; oil of cloves and of cajeput, of each, 4 grammes. Mix. To be applied with cotton.

Powder for Destroying Warts, by HUNTER.—Powdered savine and verdigris, equal parts. Mix.

Teething Syrup of DELABARRE.—Fresh juice of tamarinds. (pulp?) 3 grammes; infusion of saffron (made of 6 centigrammes), 2 grammes; clarified honey, 10 grammes; tincture of vanilla, 25 centigrammes. Mix. To be rubbed on the gums.

Electuary of Sulphur in Habitual Constipation.—Washed sulphur, 30, cream of tartar, 15, white honey, 90 parts. Mix. Dose: A coffee-spoonful once or twice a day.

Plasma of Oxide of Zinc (*Glycéré d'Oxyde de Zinc*—ROLLET).—Glycera, 16 grammes; starch, 8 grammes. Heat gradually till a gelatinous mass is formed; then add oxide of zinc, 4 grammes.

VELPEAU'S Black Caustic.—Triturate, in a porcelain mortar, 80 grammes powdered liquorice root, and add sulphuric acid in small quantities until a mass of suitable consistence is obtained, which must be neither too hard nor too liquid. This preparation forms a well-marked hard black eschar.

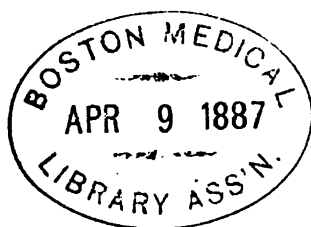
MAYER'S Syrup against Diarrhoea.—Powdered gum-arabic, 15 grammes; distilled cinna-

mon water, 15 grammes; distilled mint water, 10 grammes; syrup of quinces, 20 grammes; extract of opium, 5 to 10 centigrammes. Dissolve the gum in the syrup, add gradually the distilled waters, and finally dissolve the extract of opium. Thus prepared, the syrup will keep for a long time. Mixed with half a tumbler of water, it forms an astringent potion, of which a tablespoonful may be taken every hour in cases of diarrhoea accompanied with colic.

Chestnut Leaves in Pertussis.

In the *Cincinnati Lancet and Observer*, Dr. J. S. UNZICKER, of Cincinnati, reports the use of a decoction of leaves of the chestnut, *Castanea Visca*, in whooping-cough. He says:

I have given it a fair trial in about thirty cases, and feel satisfied in saying that at last a remedy is found to cope with this disease. In all of these cases it gave decided relief the first two weeks. The cough is cut short, and patients rest easier through nights, and the decline of all symptoms from that time on is very rapid. My method of using it is as follows: Take from $\mathfrak{z}\text{ij}$ to $\mathfrak{z}\text{iv}$ of the leaves to the pint of water; let it come to a boil, then pour the whole into a teapot, without straining, and let them drink occasionally, either cold or warm, and as much as they will, through the day and at bedtime. Children, I find, like to drink it, even without sugar, which I consider best, and have that way administered it to infants without the least difficulty.



GENERAL MEDICINE.

I. HISTORY OF MEDICINE.

Progress of Medicine during the Last Three Centuries.

Dr. G. HARE PHILIPSON, M.A., Cantab., M.R.C.P., of London, Physician to the Newcastle-upon-Tyne Dispensary, Fever Hospital, &c., delivered in the chapel of Gonville and Caius College, Cambridge, May 11th, 1867, the Thurston Speech upon the Progress of Medicine during the Last Three Centuries (*British Medical Journal*, July 20th, 1867, p. 40):

Every age has its peculiar taste and fashion. The same sciences have seldom been cultivated for a length of time with the same degree of ardor; they have given way to others; and all, during these transitions, have experienced changes more or less favorable to the improvement of their systematic arrangement. Medicine, at different periods, has assumed the tone of the prevailing sciences; it has ever endeavored to speak their language, and to subject itself to the same rules; so that it has passed successively through all the different systems that have acquired any degree of celebrity in the world. Of such changes, one of the most notable occurred near the beginning of the sixteenth century, when, by the sudden and extraordinary impulse given to chemistry, the character and complexion of medical speculation was entirely transformed. It was, at this time, that inquirers first began to speculate, who believed in the transmutation of the baser metals into gold, and in the existence of a something, could it but be found, which had the power of prolonging life to an unlimited period. In the researches to gain these objects and secrets, many valuable facts and principles were incidentally unfolded, many of nature's laws were fortuitously established. While chemistry was thus progressing into the condition of a science, Hippocratic and Galenic medicine, or the doctrine of humors, began to be less practised, and the chemical mode of reasoning on the operations of the living body, and the application of chemistry to medicinal composition, came to be very generally admitted.

The benefit, however, which was conferred upon medicine by the labors of the chemists was trifling and uncertain, compared to the great and direct advance which was produced by the researches of the anatomists. Some attention had been given to the structure of organized bodies by the earlier Italians; and they had even ventured, in a few instances, to dissect the human subject. Nevertheless, scarcely any discovery or any improvement worthy of notice had been made for many ages, when Vesalius, about the middle of the sixteenth century, entered upon his career of inquiry, prosecuted his examinations with unwearied diligence, and, disregarding the obloquy that was piled upon him, succeeded in publishing an anatomical work, which, at this day, is regarded with admiration, and which maintains its character as a faithful transcript of Nature. Anatomy, being a science more immediately dependent upon the accumulation of matters of fact, hereafter

advanced in rapid strides. The investigations extended to every portion and structure of the body. The laborers were rewarded by many grand discoveries. Foremost was that of the circulation of the blood, first completely demonstrated in the year 1620 by our distinguished fellow-collegian, William Harvey.

It might have been conjectured that, from this time forward, medicine, commencing as it were from a new starting-point, would have regularly, if not rapidly, proceeded on to a state of comparative perfection. But, no; this new instrument of truth was destined to become a new excitation of fanciful and futile hypotheses. As the chemists had derided the Galenic faith, so the chemical era, in its turn, gave way before the doctrines of the mathematical physicians, as they have been termed. Nothing now was thought of but hydraulic motion and calculation of forces. How far from truth some of the inferences were respecting the same particulars, may be inferred from the vast difference in the deductions broached by different theorists; for, while the force of the heart was estimated by one at a few ounces, it was calculated by another to be many pounds.

Through the succession of these diverse doctrines, disease was alike supposed to take its origin from the fluids of the body. This supposition continued to be accredited until the beginning of the eighteenth century, when the celebrated Boerhaave initiated the adverse. This individual, like the eclectics of old, aimed at incorporating with his own particular views the best portions of the medical philosophy which had preceded him. It does not appear that he endeavored to be the founder of a sect; yet he proceeded with the caution of a veteran, and selected with judgment the flowers which were to adorn his own parterre. Though the writings of Hippocrates and Galen had been destroyed in solemn state, yet they were not forgotten, and the wise observations of the Grecian sages formed the groundwork of his system. The doctrine of humors he assimilated with wonderful address to his chemical notions. The mechanical philosophy added to the fabric; the vessels were cones; the fluids, consisting of various particles, adapted only to given apertures, were at times forcibly impelled and impacted in vessels to which they were not fitted, and consequently produced numerous complaints. In his inferences, however, Boerhaave overlooked, as his predecessors had also done, that the reasoning that applies to formative change and impelling power has qualifications and limits which demand careful recognition when applied to organized beings.

In a manner to remedy the defect of the Boerhaavian doctrine, the general principle of Stahl, modified by Hoffmann, came to be promulgated. In the opinion of Hoffmann, the actions of the living solid were to be looked upon as the mainsprings of disordered being, and the derangement of the fluids as subordinate to the affection of the *solidem vivens*. The human system was considered as a living and an irritable machine, susceptible of various and irregular motions. To these movements the term spasm came to be applied. Cullen, in the year 1776, when he was appointed Professor in the University of Edinburgh, found the humoral pathology still in force, but expressed himself as more partial to the views of the solidists. The theory of Cullen, a modification of the Stahlian doctrine, came to be received; the terminology of the time being spasm and reaction.

In special progression the present century is abounding. The causes of sudden and violent deaths have been determined; the different purposes served by distinct parts of the nervous system have been explained; the exact composition of the blood in health and disease has been decided; and the nature of the changes which take place in air and blood during respiration have been clearly defined. By statistical inquiry the amount and mortality of diseases have been acknowledged. The nature of morbid poisons which excite disease, has been worked out. The laws of the origin and diffusion of the malaria pro-

ducing intermittent and remittent fevers, have been investigated; and the extraordinary protection afforded by vaccination against small-pox, has been established.

The diagnosis of diseases has also become much more exact, and has lost much of its conjectural character. This change has been brought about by combining a knowledge of physiological and morbid states with physical examination and the exploration of symptoms. Physical science likewise has yielded valuable assistance, and has contributed the stethoscope, the ophthalmoscope, the laryngoscope, the endoscope, specula, the sphygmograph, and the thermometer—all most useful as aids to diagnosis.

Medicine at the present day is so far advanced, that it may be asserted that the fundamental principle upon which it is founded cannot longer be said to rest upon mere conjecture and faith, but upon positive proof. By its very nature, it is prevented from proceeding in that uninterrupted way in which some other departments of knowledge have progressed. Moreover, at no time more than at the present has the mind of the profession been more active. There is a growing disposition—nay, predominant inclination—to reconsider old tenets, and to foster new proposals, in a right spirit of dubiousness with the past and hope in the future.

Progress of Anatomy and Physiology.

In an address before the British Association for the Advancement of Science, at Dundee, by Dr. WILLIAM SHARPLEY, LL.D., Secretary R. S. (*British Medical Journal*, Sept. 21st, 1867, p. 245), after adverting to the continual widening of the area of ascertained truth by exact investigation, to the mutual aid which different branches of science lend each other, and to the increasing application and improvement of instruments of precision, and of chemical and physical science to the elucidation of the living economy, Professor Sharpley continued:

We need not look abroad for examples. Some of the most important fruits of recent microscopic inquiry are due to the zeal and sagacity of our own countrymen. I need refer only to the discoveries concerning the intimate structure of the nervous system, and without invidious selection I may more especially signalize the well-known researches of Mr. Lockhart Clarke on the nervous centres, which, I am happy to say, he continues successfully to prosecute; the discoveries of Professor Beale on the structure of ganglions and of nerve-fibres and their ultimate distribution in the tissues and organs; and the interesting observations of Mr. Hulke on the retina. By using high microscopic powers, with the greatest address and skill, Dr. Beale found out exquisitely minute fibrils in the peripheral branches of the nerves, and traced their distribution in various tissues. These inquiries have been followed up by the German histologists, and now it is maintained that nerve-fibres may be traced even into the particles of epithelium. Be this as it may, it is satisfactory to know that, as the functional influence of the nerves has been found to govern in a higher degree and more direct manner than formerly suspected the circulating, secreting, and other nutritive processes, so our knowledge of the anatomical domain of the nervous system is being correspondingly extended. As a marked instance, I may refer to the recent observations on the termination of nerves in the secreting epithelium of glands.

In proceeding to say a word on other instrumental applications, I may pass over the continued investigations into the electricity of nerves and muscles, and new determinations, by new methods, of the velocity of nervous excitation, as well as new observations with the ophthalmometer, ophthalmoscope, laryngoscope, and the newly invented cardiograph, and shall content myself with specializing the investigations made in this country into the phenomena of the pulse, in health and disease, by means of the sphygmograph, and the im-

portant experimental inquiries of Dr. J. Burdon Sanderson on the influence of the thoracic movements on the circulation of the blood, carried on by means of the hæmadynamometer and additional ingenious apparatus contrived by himself. The account of his observations is contained in the Croonian Lecture for 1867, delivered by him before the Royal Society, which will shortly be published in the *Philosophical Transactions*. (See *British Medical Journal* of April 15th, 1867.)

An important contribution to the physiology of respiration was not long since derived from a combined chemical and optical investigation by Professor Stokes into the oxidation and deoxidation of the coloring matter of the blood.

Spectrum analysis promises much aid in physiological inquiry. It has been already employed by Dr. Bence Jones and Mr. Dupré, in a most remarkable and extensive series of experiments on the time required for the absorption and elimination of foreign matters by the living tissues. The substance used was a salt of lithia, and it was traced into and out of the non-vascular as well as the vascular tissues. (See *British Medical Journal* of August 24th, p. 151.)

The continued employment of chemical means in physiological inquiries scarcely requires any comment. I must, nevertheless, make an exception in regard to some recent experimental results which lead to an important modification of the views heretofore generally entertained as to the generation of muscular force. From an experiment, now well known, by Fick and Wislicenus, in an ascent of the Faulhorn, these observers concluded that the mechanical force and heat developed in muscular exertion cannot be derived solely or principally from oxidation of the proper muscular tissue. Dr. Frankland has subjected their data and conclusions to a careful chemical criticism, in which he determined, experimentally, the heat, and consequently the mechanical force, produced by the oxidation of albuminoid substances; and, on comparing this with the results of the Alpine experiment, he has fully confirmed the conclusions drawn from it. It would, therefore, seem as if the muscle ordinarily uses other materials, probably hydrocarbons, to be oxidated in the production of force, as a steam-engine uses fuel and not its substance. More lately, Professor Parkes has made, at the Netley Hospital, two series of very careful experiments, in which the whole of the discharged nitrogen was exactly determined; and his experiments, which are related in two recent numbers of the *Proceedings of the Royal Society*, lead to the same general inference as those of the Swiss inquirers; but Dr. Parkes has further found that nitrogen is retained during the actual performance of work, perhaps even taken up in some form by the muscle, and assimilated, and that the discharge of it mainly takes place in the period of rest which succeeds exertion.

Without unduly protracting these rather desultory remarks, I may be permitted to speak of a new and curious method of research, quite recently introduced by a foreign experimenter (Chrzonszczewsky), which has as yet been especially employed for tracing the more intimate distribution of the ducts in the liver and kidney, but is possibly applicable to the solution of other anatomical and physiological questions. It consists in injecting into a vein, or introducing into the stomach of a living animal, a coloring matter, which may, after a certain lapse of time, be found filling, and so rendering conspicuous, the gland-ducts through which it is being eliminated from the system.

It is needless to pursue these considerations further, and it is not my purpose to attempt anything of the nature of a general survey of the recent work done in our science. The number of active workers has so greatly multiplied, and the published results of their labors have become so immense in extent and variety, that, to me at least, it would be a hopeless task to present within reasonable compass any consistent and intelligible summary. In one of the lately published annual reports on "The Progress of Anatomy and Physi-

ology," I find that the writers referred to as having contributed to these sciences within the year are between five and six hundred, and a good many of them are cited for two or more contributions. One fruitful source of this increased production has been the institution, in recent years, of physiological laboratories in various continental seats of learning, in which practical instruction is given in histological and physiological studies, and where many able and well-trained young men, ambitious of scientific distinction, are engaged in prosecuting original inquiries. No one, of course, can doubt the gain to science thus immensely accruing; at the same time it must be admitted that the eager publication of immature results and hasty conclusions to which some are tempted, and the corrective, or at least, diverging statements of others equally confident, which speedily follow, present, in not a few cases, an amount of contradiction and confusion most bewildering to any one who desires to master the existing state of knowledge on the subject. But, although this is undoubtedly a drawback, it is trifling in comparison with the advantage of manifold activity and accelerated progress. Anatomical and physiological journals, and other channels for the publication of physiological papers, have of late years been on the increase abroad, and augmented facilities are thus afforded for disseminating new matter; and we admire, I might say envy, the number and excellence of the graphic illustrations with which they are furnished. Such advantages are not so freely offered to the anatomists and physiologists of this country. Anatomical and physiological memoirs for the most part require elaborately executed figures for their illustration, and the expense of a journal illustrated fully and fitly is found to be a serious obstacle to its maintenance, with the limited circulation which a purely scientific periodical has heretofore obtained in Britain. It has sometimes occurred to me that a publication fund might be established, which, under unimpeachable management and control, might be applied specially to defray part of the expense incurred in illustrating scientific memoirs. Such a purpose, I venture to think, is not unworthy of consideration by those who desire to promote knowledge by pecuniary foundations.

Progress of Dentistry.

At the second annual meeting of the Missouri Dental Association, held at the St. Louis Medical College, June 4th, 1867, Dr. Piebles, the retiring President, said, in his address (*St. Louis Medical Reporter*, June 15th, 1867, p. 289):

In the year of our Lord 1840, there was not a single man known in the world as a graduate in dental surgery! In that year the Baltimore College was opened, and in 1841 Robert Arthur and R. Covington McKall were graduated, and the honorary degree of D.D.S. was conferred upon eighteen other gentlemen. This old school has had an average graduating class of about fifteen yearly up to the present time—graduating four hundred and ten students, and conferring one hundred and fifty honorary degrees.

There are now six dental colleges in the United States, and there were two hundred and seventy-six students in actual attendance on lectures last winter, and of this number one hundred and eight graduated through regular examination and vote.

It is, I believe, generally conceded that the American dentist holds a pre-eminence in Europe at this time, and he has done so for a quarter of a century. Now, why is this? Because we Americans took the lead in the great cause of dental education. We started the first dental journal, and established the first dental colleges, organized societies, and put the great machinery in motion that diffused light in our profession. We sent out our graduates, who gave us a name and status there. We received their students, and graduated them, and they were proud to be called and known as *American dentists*.

On Nursing Sisterhoods, and on Hospital Schools for Nurses.

P. C. DE LA GARDE, Esq., Senior Surgeon to the Devon and Exeter Hospital, Exeter, says (*British Medical Journal*, August 3d, 1867, p. 83) that of late years ladies have afforded their all-persuasive countenance to the profession of medicine; and amiable, and, as I hear, very pretty women, have achieved medical honors. We are grateful; and yet I think it disputable whether medical practice is woman's mission. The first we hear of woman's relation to man is, that she was a "help meet" for him. Her common duties are so absorbing—the quick-witted counsellor of her husband; his consoler under the wrongs and hardships of the outer world; the mistress of his house; the mother of his children, training them from earliest infancy in the way they should go through this world to the next. I know that a pretentious education renders their ambition feverish; but if our daughters would only condescend to learn to be their own housekeepers, we should hear less of celibacy and of the inadequate "three hundred pounds a year."

It is more important that I should speak of *Nurses*, because rival schemes are, even now, claiming our decision on their respective merits. I deny, emphatically, as I always have denied, that the scarcity of trustworthy nurses is such as has been represented; and in this hospital I do not believe we shall ever get women better fitted for their duties than those we have at present. I admit that, in private practice, it would be satisfactory if we always knew where to find a nurse in whom we could confide; and it would be still more satisfactory if we could, in any way, overcome the meanness and want of consideration to which nurses have too often to submit.

There are two schemes—the first, *Nursing Sisterhoods*; and the second, *Hospital Schools for Nurses*.

The first are establishments (not necessarily Roman Catholic) formed on a monastic type, and observing an ascetic rule, I believe, in all cases. There is no question of the courage and devotion of these ladies; for they are of gentle birth. They are enthusiastic, as well as charitable; but austere discipline breaks down their crotchets and self-will. Alarm is excited lest these sisterhoods should proselytize while they nurse. I have no doubt it will be so. Women are naturally more religious than men, their moral lives rendering them less afraid to look on holy things. No one can doubt the energy of their propagandist fervor—so earnest, so impulsive. They may call each other names (from Papist to Puritan inclusive), but they will all do alike, especially if they live together and have little else than their own good deeds to talk about. I should be sorry if medical men were indifferent on such a subject, although scarcely involving any question of direct professional interest. Wholly apart from such apprehensions, I object, as a gentleman having due respect for women of my own degree.

In regard to Hospital Schools for Nurses, Mr. De la Garde gives some verbatim extracts from a printed paper, issued by authority for the use (primarily it would appear) of a great hospital in London. You would take it for an elaborate summary of the duties of the resident medical officers; but it is headed *GENERAL DIRECTIONS for the Training of the Probationer Nurses in taking Notes of the Medical and Surgical Cases in Hospitals*. A prefatory notice directs them to begin "as soon as possible, as many patients die within twenty-four hours of admission," warning them to use "great discretion" so as "not to exhaust the patient by numerous questions at a time when the vital powers may be at a low ebb." Pray observe, inexperienced women, beginning to learn the business of nursing, are told to exercise *their* discretion towards patients "so low, from accident or other circumstances," that it is presumed they may not survive the day. It is never once suggested that the resident medical officer should superintend. In fact, nothing is said about

him. But the probationer is "carefully to avoid obtaining inaccurate statements where the mental faculties have become blunted by acute or long suffering." If the patient be "in a state of insensibility," she is permitted, as an alternative, to get "the history of the case from the friends or persons conveying the poor creature to the institution."

The *preliminary account* follows. She is immediately to note the name and various circumstances of the patient, including his "constitutional character and habits." Meanwhile, the propriety of cautioning the probationer not to exhaust the dying patient becomes still more apparent as she proceeds with a "general and concise description of the disease, history, how long since first noticed, how and with what symptoms it then appeared, what alteration or addition in symptoms, local or general, have taken place; and when, what the treatment has been, and what the results."

I need not go on. Here is exactly one-half of the "preliminary inquiry;" but where is the resident medical officer the while?

The novice is also to "detail any additional observations made by the physicians and surgeons at their first visits, in reference to the character and diagnosis of the disease." It is rather sharp upon the doctors that their merest glimpse of the case should be put on record. No one reckons on an error, but it will sometimes happen notwithstanding.

Then there is a *Daily Report*, reciting all the symptoms and all the treatment, the various medicines and local applications, and everything else, and their effects, in accordance with the probationer's notion of such things. This is not a mere memorandum, to refresh her own memory; it is her written diary of the proceedings of the medical staff, given in, day by day, certainly not to the physicians or surgeons in charge of such cases, but to a lady, as I am informed. Neither is the novice to be put off (as patients and their silly friends like to be) with pompous technicalities; for she is referred "to the text-books or medical dictionaries to ascertain the exact meaning of the terms used."

Then follow five and twenty "points for special observation in the following complaints, that the nurse may be prepared to answer correctly the inquiries of the *medical attendants*." Whether the resident medical officers, or whether clinical clerks and dressers are included, does not appear; no such persons are spoken of. Clinical pursuits rank lower than formerly, and, if the nurse does so much more than her duty, I know that the students will do so much less. Here is one of the "points," a specimen taken at random. "*Amputations*: Describe whether from disease or after accident; nature of the operation; removal of limb, or in joint-diseases only of the heads of the bones, when the limb is removed; whether a circular incision is made through the integuments, and the edges of the wound brought together with strapping, or whether the flap-operation and the skin brought together by sutures; whether the operation heals by the 'first intention' or by granulation; number of arteries or veins taken up; when removed; stump or wound closed." This direction respecting "arteries or veins" is given twice over. In case of hemorrhage or phlebitis, such a note might give rise to unfair and injurious comment. The whole is enough to turn the head of any nurse.

If pupil-nurses are to obey these instructions, they must have the foremost places at operations. They actually have, as I am told, at another hospital. Is the nurse qualifying herself to operate? Whenever public opinion demands that lithotomy and other great surgical operations shall be performed by women, instead of surgeons, it will be proper, and therefore decent; but not until then will I endure a group of girls peeping over my shoulders.

As educated women are clearly contemplated, how will the scheme work? Are they to be lady doctors, under another name? or will they criticize, and control, and counteract, without responsibility? Will the medical man become a mere ceremony, a convenience,

hired reluctantly, to take the blame, if any—just as the regular practitioner is sent for when a case grows too perilous for the reputation of the quack?

Separation of Medical and Surgical Wards.

M. MAZZONI insists on the necessity of separating, even removing far apart, the surgical wards from the medical, that is to say, during the prevalence of variola, erysipelas, typhoid fever, &c. Puerperal fever is unknown in *La Maternité*, at Naples; not a case of this affection has appeared in the statistics of thirty years—compiled by M. Polasciano. —(International Medical Congress, from *La Gazette Hebdomadaire*, August 30th, 1867.)

Elevation of Standard of Medical Education.

A correspondent of the Cincinnati *Lancet and Observer* (July, 1867, p. 411), says:

With every well-wisher of the human family I hail with delight the recent renewed efforts to elevate the standard of medical education, and benefit suffering humanity. *Cheap schools* we abominate. Low fees, intended to operate upon the physical nature of medical students, to induce men to leave the plough, the cobbler's bench, the tow-path, the goose, &c.; to invite them to forsake the paths of industry and mechanical employment, to which, by nature and education, they are adapted, to sit listlessly upon the benches of a medical lecture-room six or eight months, and then to be welcomed, in due form, into the portals of a noble profession, with a certificate—*diploma*—stating that A. B. C., &c., are fully competent to advise, to operate, to auscultate, to percuss, in word, are *Physicians*, we regard as a *swindle* upon the community, as opening wide the door to charlatanage.

The cry of true reform has been lifted up, and we sincerely hope every well-wisher of the good of humanity will "cry aloud and spare not," until it *shall be consummated*.

M. Velpeau, of Paris.

In noticing the death of the celebrated Parisian surgeon, Velpeau, which took place, August 24th, 1867, after an illness of six months, the *British Medical Journal* (August 31st, 1867, p. 195), says:

Armand L. M. A. Velpeau was born at Brêche, near Tours, on May 18, 1795. His father was a farrier; and the future Professor of the Faculty of Medicine was at first brought up to the trade of shoeing horses. He never forgot his origin; and in after-life used to boast that he had introduced into surgery, from farriery, several instruments of incontestable utility. A *Traité d'Hippiatrique*, and a book entitled *Le Médecin des Pauvres*, which formed his father's entire library, gave him some idea of practical medicine. He cured himself of an ulcer of the leg, on which the skill of a country practitioner had in vain been exercised. In consequence, the farrier's son was consulted widely; and it was an error—endangering the life of a young girl by his medicines—that decided his future. The medical man called in—Bretonneau, we believe—was struck with his eagerness for learning. On his recommendation, Velpeau, now aged seventeen, was admitted to partake of the instruction given to the family of a gentleman in the neighborhood; and, in the following winter, he became a distinguished pupil of the hospital at Tours, and subsequently went to Paris. On arriving there he had to struggle with want of pecuniary means, and with the defects arising from an imperfect general education. He overcame these difficulties, however, and became anatomical assistant in 1821, doctor in 1823, sur-

geon to La Pitié in 1830, *agrégé* professor, and finally, in 1835, professor of clinical surgery. In 1833, he was elected a member of the Academy of Medicine; and in 1843 of the Academy of Sciences. In 1859, he was made a Commander of the Legion of Honor.

M. Velpeau wrote much. His three most important works are his *Treatise on Surgical Anatomy*, his *Treatise on Operative Medicine*, and his *Treatise on Diseases of the Breast*. As a professor he was clear, copious, and facile of expression; not altogether bound to the beaten path, as was shown by his early advocacy of chloroform, and by the encouragement he gave to M. Lebert in his microscopic investigations while preparing his *Treatise on Pathological Physiology*. He was one of the first in France to recognize the value of the microscope; although he subsequently raised his voice—in a discussion on cancer—against what he considered to be its abuse as a means of diagnosis.

It was as an orator that M. Velpeau enjoyed the greatest *éclat*. He did not display passionate vehemence nor warm and colored eloquence; his language was always easy, his bearing quiet, and his reasoning pointed, calm, and penetrating. From year to year he appeared to gain force and power both as an orator and as a writer. He was devoted to his profession. In summer and in winter he was always one of the first in his hospital wards. He was not what would be called a brilliant operator; but, a profound anatomist, he possessed the sure hand and the calm *sang froid* in danger which characterize great surgeons. In private life he was affectionate, sensitive, devoted to his friends, and to his pupils, who were sincerely attached to him. He was a firm opponent of every form of quackery, and would expose himself to annoyance, and even danger, in his endeavors to combat error or unmask falsehood.

M. Velpeau's funeral took place on Monday last. His remains were followed to the grave by a large number of the visitors present at the International Congress, by most of the officers of the Medical Provident Association of the Seine, and by a number of his pupils and other persons.

Obsequies of Velpeau.

The funeral took place on Monday. The attendance was immense, and not being able to find room in the church, the vast assembly swelled back and filled the surrounding space. The body was conducted to the cemetery of Père Lachaise. M. Thoinet, of Thurmelière, son-in-law of the deceased, led the mourners. The cords of the pall were held by MM. Chevreul, president of the Academy of Sciences; Tardieu, president of the Academy of Medicine; Laugier, who succeeded M. Wurtz, dean of the Faculty, and Husson, director of Public Assistance. The Medical Congress was represented by a large number of its members, among whom, the most distinguished foreigners. If among the dignitaries of *l'Association de prévoyance des Médecins de Paris*, of which Velpeau was president, there was not seen the Secretary-General, M. L. Orfila, it was because the tidings of the great man's decease reached him in the country, and notwithstanding his extreme diligence, he arrived in Paris too late.

The different discourses were pronounced over the tomb by Nelaton, in the name of the Institute; by Gosselin, in the name of the Academy of Medicine; by Richet, in the name of the Faculty; by Husson, in the name of the Administration of Public Assistance; by Guyon, in the name of the Surgical Society; and by Longet, in the name of the friends of the deceased.*—*Gazette Hebdomadaire*, August 30, 1867.

M. GOSSELIN, Professor of Clinical Surgery, lately at *La Pitié*, has been appointed Professor to the same Chair, in *La Charité*.—*Moniteur*, Oct., 1867.

* Velpeau was attended in his last illness by Nelaton and Barth.—Eps.

Dr. VERNON, Physician to the Hôtel Dieu, has resigned his position.—*La France Médicale*, Oct., 1867.

We regret to announce the death of Dr. BARREY, Medical Superintendent of the Lunatic Asylum at Rhodes. He died October 1st, after a short and painful illness, in the fifty-first year of his age.—*La France Médicale*, Oct., 1867.

Banquet of the International Medical Congress.

The day of the banquet had been fixed intentionally about the middle of the session of the Congress, that it might serve as an interlude; and likewise to bring together at the same time a great number of convivia. And of the two hundred subscribers not one, we believe, failed to answer the call. The magnificent *salle à manger* of the Grand Hotel, brilliantly illuminated, did not appear too spacious for the four or five long tables, extended parallel to each other. The service not taking place before half-past 8 o'clock, there was plenty of time for the members to mingle together in the waiting saloon, and to become acquainted with one another; for the arrangement of the hall of the Congress was never favorable for meetings, for presentations, or shaking hands. M. Frerichs, decorated and adorned, elegant in manners, and M. Virchow, entirely hard and dry, in a solemn black suit, with a false collar cutting his ears, were the objects of special attention.

The dinner was animated, noisy, gay, even jovial in certain quarters (some say on M. Ricord's side). The celebrated syphilographer was seated to the left of the president, and M. Virchow to the right. After dinner came the toasts. Among them, M. Piorry drank to the unity of medicine, to the fraternity of medical men, and to humanitarian science. M. Ricord drank to the extinction of venereal diseases, and to the suppression of that specialty!—*Gazette Hebdomadaire*, August 30, 1867.

II. STATISTICAL MEDICINE.

Notes Relating to the Influence Disease has upon the Weight of the Human Body,

AND EXPRESSING THE RESULTS OF A SERIES OF EXPERIMENTS UNDERTAKEN AT THE CHARITY HOSPITAL, PARIS, UNDER THE DIRECTION OF PROF. MONNERET, IN THE YEARS 1865, '66, '67.

THOMAS LAYTON, Interne, &c., says, in the *Southern Medical Journal*, August, 1867: Forced marches brought the weight down, on one occasion, 350 grammes, and on another, 680 grammes (one pound avoirdupois is equivalent to 453.4148 grammes). These two instances merely show the loss which attends muscular fatigue, the ratio existing between muscular fatigue and loss of weight. In the same observation, fatigue resulting from intellectual labor coupled with want of sleep, had a notable influence upon the weight. Thus, at a certain moment, press of work permitted only four hours sleep to be taken out of the twenty-four; nearly the whole day was employed in the composition of a manuscript. The weights were carefully taken immediately before and after the completion of this task, and 570 grammes were found to have been lost in 24 hours. The effect of purgatives was equally curious. Hunger and thirst, whether due to accident, as happened to the mariners on the raft of the *Medusa*, or to disease, tell a disastrous tale upon weight, which gives, as it were, the measure of the sufferings endured. To return, however, to

the experiment related above, I was surprised to see how rapidly the weight regained its usual standard, whenever the disturbing cause ceased to act, and the habitual manner of living was resumed.

A few observations will, I trust, illustrate each element of the foregoing classification.

With regard to acute diseases, two principal periods are noticed in their occurrence, viz., the periods of *loss* and *reparation*. The former was observed during its whole duration, as when a patient enters the hospital he has often been unwell for some days. Whilst this period lasts, the weight, as a rule, lessens rapidly, and from the proportion of its diurnal variations, a good idea may be formed of the relative gravity of the case. In his description of typhoid fever, M. Monneret mentions this loss of weight observed, and states that he has met with a decrease of 500 grammes per diem, during ten days or more. Mr. L. also obtained similar results, and in some cases has remarked a still greater falling off daily. Generally, the greater the danger the greater also and more rapid is the loss of weight. During the period of reparation, the weight regains what it has lost under the influence of fever and other debilitating causes. This increase in weight is at times sudden and unexpected in its appearance, and is ushered in before other symptoms would warrant the announcement of convalescence. This fact is so striking, that but little hesitation need be felt in declaring convalescent the patient whose weight begins to ascend, even though from the indications usually accepted this announcement may seem premature. The series of weights taken during convalescence furnish the means of knowing whether this state of reparation will be short or tedious, as a steady and rapid augmentation accompanies a speedy return to health, while the contrary obtains when the intermediary condition between health and disease is destined to drag on slowly. These observations on weight coincide with thermometrical investigation, and an elevation of temperature is attended by a diminution of weight; or in other terms, the higher the fever the lower is the figure given by the scales.

With reference to chronic disease, it is at once evident that there must be almost as many varieties as there are forms of malady, for in such cases the patient undergoes alternations of remission and exacerbation with which the weight corresponds, and it not unfrequently happens that the advent of unpropitious symptoms may be foreseen by the decline of the weight, whilst no other species of warning will perhaps be given until some days later.

Some chronic diseases follow a uniform path, and terminate fatally and speedily in every instance. Others may drag on for years, whilst a third category seems to be divided into periods, during a portion of which the general health, and, as a physiological consequence, the weight do not undergo much alteration. The time comes, however, when these early stages merge gradually into more advanced forms; then the whole organism falls under the sway of the affection, and its suffering in proportion to its intensity bears at once upon the weight.

Organic maladies of the digestive organs have a very remarkable action upon the scales. Their wasting effects, due to continued vomiting and the lesion of the functions of nutrition, bring on a degree of inanition that increases till death comes to the relief of the victim.

As regards pulmonary phthisis, from numerous observations Mr. L. has been led to conclude that the weight *increases* during the *first* and a portion of the *second period*. Towards the close of the latter, however, and during the whole of the *third stage*, the weight decreases uniformly, as a rule, until death. In making the above statement as to the *increase* during the *first* and a portion of the *second period*, it will be remembered that he collected his observations from the examination of hospital patients *only*—that is,

from among a class of persons who receive good attendance, wholesome diet, and much better care in a hospital than they could for the most part procure in their own homes.

Thus, were a new proof wanting of the utility of these hygienic means in the early stages of consumption, the scales would serve to establish the fact, giving as they do the mathematical demonstration of the increases of weight which, upon due allowance being made for accidental agencies, cannot obtain unless the general health and the different functions enter upon a state of improvement.

In the *third* period of phthisis there are so many debilitating causes called into play, that the single mention of loss suffered by the weight will suffice without requiring explanation.

In an artificial division, comprising acute affections, adopted merely for the sake of order, the weight, which had entered upon a series corresponding with the vicissitudes, the ups and downs of the original malady, suddenly diminishes more or less rapidly, proportionately with the character and intensity of the acute symptoms. Should these disappear entirely, the weight may either ascend to its former expression and resume its chronic series, or else the same may occur with this difference, that the organism, not recovering completely from the shock of the acute disease, the weight remains at a lower level than the one it reached when the acute attack supervened.

In conclusion, Mr. L. says that the utility which the adoption of a *series* of weights presents in disease is twofold.

1st. It is an experimental means of research based upon physiological data, for when the functions are unimpeded, the weight in a healthy person must remain at a certain standard (except in young children where, each successive month, for instance, the weight must increase, and in the case of adults who are enabled at a given period to follow a better regimen, &c.). Let the functions, and consequently nutrition, become impaired, immediately the general health suffers and the scales announce the advent or the progress of disease.

2d. When illness has once set in, a series of weights furnishes the physician with another practical element to aid in establishing prognosis and general rules for guidance, just as it is at present possible to augur upon a case of typhoid fever, for instance, from a knowledge of the general laws thermometrical research has found to govern this affection.

III. STATE MEDICINE.

Examinations of Medical Witnesses.

Dr. HENRY W. RUMSEY, T. C. D., of Cheltenham, in some remarks upon state medicine in England, read before the annual meeting of the Association in Dublin, August, 1867, says, in regard to medical jurisprudence (*British Medical Journal*, Sept. 7th, 1867, p. 199):

I think it unnecessary to prove that the methods adopted by the courts and legal authorities for eliciting facts and for obtaining scientific opinions in these inquiries are especially liable to error and fallacy, and tend to pervert rather than to establish truth and justice.

1. We encounter, first, the enormous disadvantages arising out of the particular forensic character conferred on the person called upon to give scientific evidence. He is subpoenaed as a *witness* on one side or other of a civil trial, or by the Crown, or by the defence. As

a mere witness, legally speaking, he has nothing to do but to state fully and accurately *the facts* which he has observed. He may very properly decline to give any *opinion*. The former belongs to a mere witness; the latter to an *adviser* of the court. And, unless he appears in the character of an adviser or assessor and hears the whole evidence, he will generally do well to withhold any formal statement of opinion. Unhappily for himself and others, he does not always exercise this prudent reticence.

2. The usual method of examination destroys the value of scientific statements. The position of an *advocate-witness* does not always permit him to say all he knows.

Barristers, ignorant of the proportionate value of the details of medical evidence, often give undue prominence to secondary or trifling points, which serve to conceal or obscure the more important. Oral examination, unless it be after the delivery of a written report, destroys that careful elaboration of the subject which the witness may have previously made mentally or in writing. The truth is distorted, or only half told.

Surely, neither facts nor opinions should be given in the words of counsel, who are professionally bound to serve their clients.

3. There is also the prevailing defect of competence and skill in the medical witness. For even in the statement of facts, unless he possess special attainments, trained powers of observation, experience in the detection of incidents and circumstances, and a clear and intelligible manner of explaining them, he may fail in giving a correct impression to the court; while, if he hazards an opinion, he runs the greatest risk not only of discrediting his whole evidence, but of hopelessly mystifying the jury.

It must be recollected, that neither the legal profession nor the public have any recognized standard or test by which to determine the special qualifications of medical men for forensic duties. The legal status, in this respect, of all medical practitioners, is the same. The *Medical Register* of the United Kingdom is the only proof of qualifications; and there is no classification in that Register.

The real knowledge of a particular subject which this or that man may possess is seldom known to those who arbitrarily, and for interested purposes, select the witness. The merest sciolist may be the very man to obtain an influence over the jury, which the more cautious, learned, and conscientious witness may wholly fail to secure.

4. But the employment of even skilful and learned men as partisan witnesses is dangerous in proportion to their skill and learning. It leads to an abuse of science—science employed, not for the discovery of truth, but for the triumph of a cause. I might cite instances of eminent men who, on different occasions, have been “hired” to give opinions on opposite sides of the same question, such as the salubrity of water-supplies, the deleterious effects of gas-works and other offensive trades and manufactures.

To place the scientific referee in his proper position, he should be allowed to act independently of the bar, delivering his written report after a careful examination of the case, and his final conclusions after hearing all the evidence. It might, nevertheless, conduce to the ends of justice, that he should be subsequently cross-examined and re-examined upon his report. Some of our most distinguished men so abhor the present system, that they have uniformly refused to appear in court—Professor Faraday, for instance. “The true scientist,” as Mr. Chadwick once said, is often deemed “an unsafe witness—safe for the truth, but unsafe for the particular cause.” That full comprehension of the difficulties, uncertainties, and contingencies, that carefulness to avoid bold assertions and hasty conclusions, that absence of dogmatism, which distinguish the true philosopher, render him far less available for the lawyers than a less scrupulous or a more shallow and self-confident witness.

The demoralization of “experts” under the present system can hardly be doubted. While

we see many excellent and learned men devoting their great abilities to the public service as experts in medico-legal inquiries, there are a few others who, as Lord Bacon says, "may be accounted the left hand of courts; persons that are full of nimble and sinister tricks and shifts, whereby they pervert the plain and direct courses of courts, and bring justice into oblique lines and labyrinths."

The inferences to be drawn from the preceding considerations seem to be these:]

1. That special study and the attainment of special knowledge (to be tested for the future by special examination) should be required for those who profess to undertake medico-forensic duties.

2. That, in preliminary inquiries, our proposed District Physician (Farr's Officer of Registration) would be the proper person to report to the court.

3. That, in other matters (already noticed), not involving forensic action, but requiring the opinion, report, or certificate of an independent and experienced referee, the same officer would be, obviously, the proper *local* authority.

4. That the Lord Chancellor, or the judges, should appoint a limited number of eminent persons, men held in general esteem, and known to be specially learned—some in psychology, some in the forensic department of chemistry and toxicology—as *assessors* to the courts of assize. These officers of circuits would receive the most important aid from the proposed official "district physicians."

5. That in very obscure, prolonged, and complicated causes, where other scientific men are engaged by litigants, or appointed by the court, there should be, previously to the final trial, a free consultation between the advisers on both sides; that, as Dr. Russell Reynolds has well said, there should be a frank interchange of opinion, and a discussion of facts and theories, *before* meeting in court. Points of agreement would be settled; points of divergence would be limited, and the court definitely instructed.

In the discussion upon Dr. Rumsey's paper which ensued, Mr. HASTINGS said:

I owe some apology to this Association for addressing it, seeing that I have not the honor to belong to the medical profession. But this is a subject which, to a certain extent, is common to the professions of both law and medicine, besides being deeply interesting to the public. I therefore venture to offer a few remarks on the extremely able and most interesting paper which we have heard from Dr. Rumsey. With reference, first, to the question of medical witnesses, it is perfectly true, as Dr. Rumsey has stated in his paper, and Dr. Lankester reiterated since, that the medical evidence often heard in courts of justice is of a very unsatisfactory kind; but I must say,—and I can say it with all the more force as not being a medical man,—that it would be an entire mistake to suppose that evidence is bad because it is medical, or because it is given by a medical man. I have heard medical evidence often most unjustly treated with ridicule by judges and others accustomed to hear it. But the fact is, there is a great distinction to be drawn. The question is, not whether it is medical evidence or not, but what kind of medical evidence it is. I have practised at the bar for more than seventeen years; and during that time, on circuit and at sessions, I have had the good fortune to examine a considerable number of medical witnesses; and I have remarked that, where they were giving evidence upon material facts, anything more clear, straightforward, and satisfactory as evidence had never been given by any class of men in a court of justice. [Applause.] But medical evidence becomes unsatisfactory at the point where all evidence becomes unsatisfactory; that is, where the witness ceases to be a witness and becomes an advocate in the witness-box. The same observation applies to all kinds of evidence,—evidence as to patents, and that of rival engineers in railway cases before the House of Commons. The fact is, the witness is brought to court retained by one side, perhaps paid by that side. He feels bound,—at

any rate, his inevitable bias is,—to do his best for that side; to keep back everything that tells against it, if he can; to put forward most prominently, even unfairly, those parts of the case that tell for him; and, of course, to enter into a gladiatorial contest with counsel as to whether the whole truth is to be brought out. Therefore I most cordially concur with all that Dr. Rumsey said as to the inexpediency of that class of evidence. But I do not see how you are to stop it. I do not see how you can ever say, in either a criminal or civil case, that the parties are not to bring any evidence they choose before the court, and let it be sifted by cross-examination. But there is one course recommended by Dr. Rumsey, and which I heard him recommend before; for this is by no means the first time that I have had the pleasure of hearing him on the subject. I heard him so long ago as 1859, in the Social Science Congress, read an able paper on this very subject. The paper was referred for investigation to a special committee of the Association, which reported in the form of a long series of resolutions, very much carrying out many of the observations that he made to-day; and one point that he particularly dwelt on, and on which I most cordially concur with him,—and I believe that the proposal would be carried out to-morrow, if only the public mind were thoroughly made aware of its importance,—was as to the expediency of having attached to courts of justice trained assessors, who should assist the judges in the discharge of their judicial functions. [Applause.] That very measure was recommended years ago by a special committee of the Law Amendment Society, after a long investigation; and was also recommended by a special committee of the Social Science Association, and supported by Mr. Welsh and several others of the most scientific men at the bar. I have often heard it said, and I know some of the judges say, that it would not do to establish a double hierarchy in courts of justice. My answer is, that it is done; that the system is already in existence in the country. There is one court of justice, most ably managed, in which this system of assessorship prevails; and that is the Court of Admiralty. When the Judge of Admiralty sits to try a cause, for instance, as to the collision of two vessels in the Channel, and to ascertain which of them was in fault, it is the business of that court to find out in the first instance the facts, and nothing but the facts. But, having elicited the facts, the judge turns round to the two Trinity Masters, who by law sit with him in court and hear the evidence, and says, “Tell me, you, who are scientifically versed in seafaring matters, was it the duty of the one vessel, say, to have ported her helm, or of the other to have backed her sails and showed a light?” And the Trinity Masters say, “In our scientific opinion, this vessel or that vessel was wrong;” and the court gives judgment accordingly. [Applause.] Now, I cannot see,—taking, for example, a poisoning case,—why precisely the same thing should not be done; why, instead of having an unseemly exhibition between the medical and the chemical witnesses, the court should not content itself with eliciting the simple facts of the case as they took place, according to the evidence of those who proved them; and why the court should not then say to its highly-trained assessors,—for, in all medical inquiries, the assessors ought to be highly-trained practitioners,—“Gentlemen, you have heard these facts, as stated by the witnesses before the court; I lay them before you, divested of all extraneous matter. Tell us what is your scientific opinion: Were these results, in your opinion, produced by poison, as is stated by the prosecution; or were they not?” And you would then have an absolutely judicious, unbiassed, calm, trained opinion, on which the jury, and afterwards the judge, might act.

Examination of the Remains of an Infant, with Answers to the Court as to the Cause of Death.

Prof. MASCHKA, in the *Rheiner Med. Wochenschrift*, June 1st, 1867, gives an opinion of the following case :

A servant maid, 24 years old, in order to destroy her infant, according to her own statement, sat upon a tub filled with water. After a few pains the child was born, and passed from the womb into the water; shortly after, she threw the contents of the tub into the privy. After eight days the suspicion becoming strong that she had been recently delivered, she confessed, making the preceding statement. She also declared that she felt movement until just before birth. On searching the privy the remains were discovered, and found to be in the following condition :

They were wrapped in a linen cloth and pieces of paper, and covered with sand, mud, and fecal matter. The head, with the first two cervical vertebræ attached, was in a state of tolerable preservation. The vertebræ were denuded of the soft parts; the ligaments of the same were uninjured. The weight of the whole head was 18 ounces. The antero-posterior diameter 4 inches and 5 lines, the biparietal 3 inches 2 lines, the oblique 5 inches 3 lines, the circumference 11 inches 8 lines. The left parietal and temporal region was denuded. On the uninjured parts of the head there was a growth of thick, black hair, one-half inch long. The dermal coverings of the right cheek, the nose, and the right half of the upper lip were well preserved, and of a clear red color. The dermal covering of the left cheek was entirely gone, and the zygomatic arch laid bare. The borders of the parts destroyed were rough and jagged, as if gnawed. They presented no trace of reaction. The tongue, soft palate, pharynx, and trachea, were entirely wanting. One of the cervical vertebræ was missing, the rest of the spinal column was in a state of tolerable preservation, and measured 6 inches 1 line. Only a few of the ribs remained attached to the dorsal vertebræ, and some of these were broken off near their insertion. The pelvis was entirely preserved, and portions of the female organs of generation could be distinguished. The femurs were measured, and found to be 8 inches 4 lines long. In the epiphyses of the femur there were discovered points of ossification about one-half line in diameter. The fibula measured 2 inches, the tibia 2 inches 6 lines. In the cavity of the pelvis there was found a coil of intestine, containing in its lower part the traces of meconium. The lesions of greatest importance were found within the cranium. On removing the calvaria the periosteum of the parietal bones on each side of the sagittal suture was found of a dark blue color; under the same there was found a collection of coagulated blood of about the size of a dollar. The bones of the head, especially the parietal bones, were uncommonly thin, soft, and flexible. The left parietal bone was indented in several places, and broken; at the same time it was noticed that there were several small apertures arising from incomplete ossification. The borders of these were extremely thin and transparent.

The occipital and frontal bones were uninjured, but soft and very flexible. An aperture as large as a pea was found in the frontal bone, the result of deficient ossification. In the longitudinal sinus there was a little fluid blood. Under the dura mater, as well as in the meshes of the pia mater, there was found a layer of coagulated blood several lines in thickness, extending over both hemispheres. The substance of the brain was of a dirty-white color, and extremely soft, almost fluid. The lateral ventricles were empty. There was also a layer of clotted blood at the base of the brain. On removing the dura

mater from the base of the skull there was found no appearance of blood, but in the left temporal and occipital bone there was discovered a slight fracture.

All the other organs were wanting.

OPINION.

So far as regards the loss of the soft parts and the dismemberment of the hard parts, this was undoubtedly done by rats, as is shown by the rough, unequal, and jagged portions remaining; and further, that the body lay in a place much frequented by these animals for eight days.

Whether the child was recently born, and whether it was at full term, cannot be accurately determined, as both the respiratory and abdominal organs were absent.

The diameter of the head and the length of the individual bones, with points of ossification, show that the child was at full term or near full term. With regard to the extravasation of blood within the cranium, it cannot be presumed that it occurred *before* birth, inasmuch as the girl has stated that she felt movement up to the last day, which would not have been the case, as such an extravasation would have produced death, and no motion would have been perceptible. It appears, then, very probable that the extravasation of blood took place after birth, and that the fractures, having near them under the periosteum an effusion of blood, were also received during life, caused either by a blow, pressure, or a fall upon some hard object.

As such effusions of blood can only occur *during life*, it is rendered probable that the child lived after birth, and received the injuries which caused the effusion and extravasation of blood in a living condition.

This opinion cannot be adopted with certainty, because, on the one hand, the organs of respiration, the most valuable aids to the formation of an opinion, as to life after birth, were wanting. While, on the other hand, the bones of the head were not fully ossified, containing small apertures not yet closed. Therefore, the possibility cannot be set aside, that *during the birth*, by the passage of the head through the pelvis and external parts, the indentations and fractures may have occurred, and the brain not having sufficient covering may have suffered compression enough to have produced the effusion and extravasation ending in death, without any effort on the part of the mother, and without falling in water after the birth; in which case, the most well-directed attempts would have failed to save life. A more exact or extensive opinion is not possible, on account of the absence of most of the organs.

Rape. What is It?

Dr. R. P. HUNT, of Chicago (*Chicago Medical Journal*, October, 1867, p. 472), says:

Frequently, in reading the different journals, from all parts of the country, we find reported cases of rape. Now, is rape possible? A strong man may violate a child, but can any man, of no matter what strength, violate a woman? Does not a woman who is raped, as said, more or less yield? Is not the passion which would cause an animal in the human shape, so much excited as to attempt such an outrage, is he not, I ask, so excited that, before the crime could be committed, nature would involuntarily relieve itself?

Does not a brave and defiant woman always defend herself, and also that which is dearest to her, her virtue? Is there nothing in the old Joe Miller joke, in which a rape was committed by a small man upon a large woman, both standing: "Oh! your Honor, I stooped." Are there not many stooping rapes? Did not Queen Elizabeth exemplify this case well, when she was appealed to? "Hand me your sword," said she to the officer. The sword

was handed. "No, I only wish the scabbard; keep the sword." The sovereign's orders were obeyed. Queen Betty with the scabbard, the officer with the blade, she orders him to place the sword in the scabbard. At each effort to do so, the great ruler of England would twist her wrist and move the mouth of the scabbard. "Why do you not replace the blade?" says Queen Bess. "Your Majesty moves the scabbard too much," was the reply. "Well, if the woman had done the same, she might probably have been more fortunate." Except by brute force, used by more than one, can rape be accomplished? Is not fright or willingness a necessary accompaniment? Is not rape like seduction, where one must meet the other?

Poisonous Hair Washes.

The *Journal of Applied Chemistry*, has the following pertinent remarks on this topic :

That there is a great need of better information among the common classes regarding the poisonous compounds sold under thousands of different names as hair washes, hair invigorators, and hair dyes, is constantly pressed upon our attention from many sources. Even those who should be better informed seem to be so generally thoughtless or criminally neglectful that the importance of the subject is almost totally lost sight of, unless public attention happens to be called to it by a striking example of the evil effects of these poisons. The following, from the *Utica Observer*, is worth the attention of all who use any sort of dyes or artificial "restoratives" for the hair :

"The *Journal of Applied Chemistry*, for this month, asserts that paralysis has been produced by the use of lead, employed to give a dark color to the hair, and says the various 'hair restoratives' so much in vogue, which contain sugar of lead, should be forever abandoned. I am induced to send you this note from the fact that a lady recently called on me for advice in a case of paralysis of the left eyelid and tongue, caused entirely by the use of a popular hair nostrum.

"She was recommended to a skilful practitioner, who will probably find great difficulty in curing the malady, for it is notorious that lead is one of the most difficult poisons to expel from the human system.

"But, sir, although not competent to prescribe for this rapidly increasing malady, it is easy enough to give the method for detecting the lurking fiend, which is to take one grain of iodide of potassium and drop it into a three ounce bottle of the suspected stuff; shake it slowly for a minute, and if the compound turns yellow and ropy, empty the contents of the bottle into the cesspool, no matter what it cost or by what balsamic name it is known in the advertising column.

D. B."

We thank our correspondent for his communication. It touches upon a subject of more importance than the public are generally aware of. The hair restoratives containing sugar of lead are doing a world of harm, and the law should stop their manufacture and sale. One who is very dear to the writer of this paragraph has been for years an invalid, from the use, as physicians and herself are fully convinced, of a hair dye which was formerly very popular and much used. The encroachments of disease caused by the preparation referred to began with a gradual loss of power in the left arm, and thence the weakness has extended until nearly the whole system has become paralyzed. For two years, the patient has not been able to leave her bed, and for nearly half that period she has been unable to speak! To nothing else than the use of a hair restorative containing sugar of lead is her present condition attributed. But for that she would probably be well, strong, and useful to-day.

We take blame to ourselves for having failed to speak strongly and often on this subject

before now, and say to every one who reads this : use no hair dye which has not been carefully analyzed, and which your physician cannot certify to you to be harmless. The cases are numerous wherein partial or total paralysis has resulted from the application of the villainous compounds of which we are speaking.

Food Value of the Potato.

Dr. E. SMITH says (*Practical Dietary*) that there is probably no other vegetable food, except wheaten bread, of which so much can be fairly said in its favor. Its merits, however, vary much with the kind of "seed," the period of maturity, and the soil in which they are grown. That kind should be preferred which becomes mealy on boiling, and which, when well cooked, can be thoroughly crushed with the finger. The potato which is known as "waxy," and those which remain somewhat hard when boiled, do not digest so readily as the mealy kind, but for that very reason they are said to be more satisfying. It is not material in reference to nourishment whether the potato be boiled or roasted, since in both methods it should be well cooked. In point of economy and convenience, however, it has been found better to boil than to roast them; for whilst the loss in boiling upon 1 lb. of potatoes, scarcely exceeds half an ounce, that in the most careful roasting is 2 oz. to 3 oz. It is also more economical to cook them in their skins, and to peel them immediately before they are eaten; but this is not very convenient in many families, and the color of the potato is not quite so agreeable as that of those which have been boiled after peeling. When they are peeled before boiling, and particularly when they are small, and the operation is performed carelessly, from one-third to one-fourth of the whole weight of the potato is lost, and if there be no pig to eat the peelings the whole is wasted; whilst the weight of the peel which is removed after boiling would not amount to more than 1 oz. in the pound. When potatoes have been roasted, the loss in weight from the skin and drying is more than one-fourth of the weight before cooking. An average sample of potato, after it has been peeled, contains 11 per cent. of carbon, and 0.35 per cent. of nitrogen; and hence in each pound there are 770 grains of carbon and 24 grains of nitrogen, and it is greatly inferior to bread. The economy of its use depends upon its cost; so that in times when potatoes are sold at $\frac{3}{4}$ d. and 1d. per lb. they are a very dear food as compared with household flour, whilst they are a very cheap food when produced by the laborer at the cost of the "seed" and the rent of land. Thus, at $\frac{3}{4}$ d. per lb., only 1024 grains of carbon and 32 grains of nitrogen will be obtained for 1d.; when the cost is 1d. per lb., the quantities will be reduced to 770 grains and 24 grains. When the laborer, however, can obtain 50 bushels of potatoes from a quarter of an acre of land, at a cost of about 30s. for seed and rent, he will have more than 7 lbs. of potatoes for 1d., and the quantity of carbon and nitrogen thus obtained for that sum be 5770 grains and 200 grains. If, however, he were to sell a large part of his crop at the market price, he could procure with the money thus obtained far more nutriment in the form of flour than would have been derived from that portion of his potatoes. The weight of potatoes which alone would supply the daily nutriment required by a man would be about 6 lbs. in reference to the carbon, and 8 lbs. in reference to the nitrogen; but when a laborer in the west of Ireland lives upon this food, he is allowed 10½ lbs. daily, besides a large supply of buttermilk; and as both of these kinds of food are cheap in that locality, the proceeding is even then an economical one.

Rennet Whey as an Article of Infantile Alimentation.

Dr. C. A. LOGAN, of Leavenworth, Kansas (*Leavenworth Medical Herald*, Oct., 1867, p. 196), speaks from personal experience very highly of this whey for young children.

The method of preparation is to heat perfectly pure and sweet milk to a temperature of 120°, and to each pint drop in a piece of rennet about the size of a pea. When coagulation of the casein ensues, strain through a coarse cloth, sweeten well, and it is ready for use. By boiling, it is rendered susceptible of being kept much longer.

Condy's Fluid and Carbolic Acid.

CONDY'S fluid is a solution of some permanganate; for our present purpose let us say permanganate of potass. One equivalent of this salt = 158 is calculated to lose one-fourth of its weight of oxygen in presence of oxidizable matter, and in so doing loses the pink transparency of its solution, and forms a brown precipitate. The quantity of oxidizable matter may either be estimated by giving the quantity of oxygen in the decolorized permanganate simply, or on Dr. Letherby's method, by multiplying the amount of oxygen by 8. But we cannot at present go into the process, which will be found well described in the papers above referred to. We want rather to come to one or two practical points of present application.

Let us suppose a water of a bad, or at least a suspicious marshy smell; the addition of one or more drops of "Condy" or of one of the finer solutions of permanganate, will speedily remove that smell and taste, and make the water fresher and nicer. The quicker the decolorization, the greater the need of it.

If water so treated, with a slight pink color remaining, be passed through a filter, it comes out perfectly clear and colorless; but without filtering may be used for cooking or making tea and coffee after the brown sediment has settled. Most assuredly any one thirsty enough to drink raw London water just now had better use the permanganate and filter too.

It seems generally agreed that the gases of decomposition are very quickly neutralized by this means, and that organic matter actually decomposing very quickly decolorizes the liquid also. But this is not the case with *stable* organic matter. Water colored with Condy so as not to be drinkable with pleasure, yet may contain animalcules in the most lively state. Nay, the amœba, paramœcium, colpods, and other disgusting broods, are not in the least affected by water too reddened to be drinkable. The same with regard to minute plants. Give *quantity* enough and *time* enough, and all will be destroyed—first, the stinking gases; next, the decaying organic matter which evolves them; then the microscopic animalcules which feed on it, and which, if not destroyed by the Condy, would die of starvation; and the plants last.

Time and quantity also are required for the destruction of such a substance as the bitter extract which is diffused into water from quassia; this may be got rid of in twelve hours. The resistance of strychnia is much greater; still a very weak solution may be deprived of all bitter taste by excess of permanganate in twenty-four hours. Matters having organic form and firmness, as starch, &c., if not decomposing, are very slowly acted on.

Animalcules of the kinds indicated may also live in water just containing carbolic acid enough to be smelt and tasted.

The conclusions we would draw from the above remarks are that when we employ the carbolic acid for the disinfection of drains, sinks, &c., it ought to be employed in a state of pretty high concentration and large quantity, so as, above all things, to purify the

aperture out of which the dangerous emanations would come. Likewise in the use of Condyl's fluid for purifying water-butts, enough should be used, but we should take care also that the butts themselves are cleansed, and pitched or charred inside, for it is a waste of force to use the permanganate to do what might be done by a handful of lighted shavings and a brimstone match.

We may add that at least one traveller of our acquaintance used the permanganate daily for some time with no ill effects whatever.—*Med. Times and Gazette* [London].

Composition and Quality of the Metropolitan (London) Waters in May, 1867.

NAMES OF WATER COMPANIES.	Total Solid Matter per Gallon.	Loss by Ignition.	Oxidisable Organic Matter.	Hardness.	
				Before Boiling.	After Boiling.
THAMES WATER COMPANIES.	Grains.	Grains.	Grains.	Degrees.	Degrees.
Grand Junction,	21.27	1.00	0.68	12.0	4.5
West Middlesex,	19.00	0.45	0.40	11.5	1.5
Southwark and Vauxhall,	18.41	0.50	0.46	12.0	4.0
Chelsea,	20.83	0.75	0.69	12.0	4.0
Lambeth,	20.77	0.50	0.64	12.0	4.0
OTHER COMPANIES.					
Kent,	26.62	0.20	0.18	15.0	8.0
New River,	16.80	0.50	0.21	11.0	4.0
East London,	18.74	0.51	0.39	11.0	4.0

The loss by ignition represents a variety of volatile matters, as well as organic matter, as ammoniacal salts, moisture, and the volatile constituents of nitrates and nitrites.

The oxidizable organic matter is determined by a standard solution of permanganate of potash, the available oxygen of which is to the organic matter as 1 is to 8; and the results are controlled by the examination of the color of the water when seen through a glass tube two feet in length and two inches in diameter.

HENRY LETHEBY, M. D.

Antiseptic Properties of the Sulphites.

Dr. RICHARDSON read a paper before the British Association, from Dr. POLLI, on the subject.

Sulphurous acid was said to be the most active agent in preventing or arresting all organic fermentation. As the acid, however, was not sufficiently applicable in experiment, Dr. Polli had undertaken an investigation as to the action of the sulphites of lime, hyposulphite of magnesia, sulphite of magnesia, sulphite of soda, and granulated sulphite. These substances were found to possess all the properties of sulphurous acid, with the advantage that their action was more uniform and certain and constant. In experiment-

ing on animals and himself, he found that large doses could be taken without risk. On killing animals treated with sulphites, and others not so treated, he found that the former were most slow to decompose, and, indeed, remained quite fresh, while the others were putrescent and offensive. Another series of experiments showed that in one class the administration of the sulphites was sufficient to effect a more or less rapid cure in cases where blood-poisoning was present, as in fevers.

Dr. Richardson distinctly mentioned, however, that Dr. Polli was anxious to have it clearly stated that he did not attribute this to any curative power in the sulphites, but to the fact that they arrested decomposition, and by so doing allowed the animal to recover by the recuperative power existing in its own constitution.

IV. EPIDEMIOLOGY.

The Malignant Purple Fever, Epidemic in Ireland.

At the meeting of the Epidemiological Society, July 1st, 1867, Dr. JEFFREY, a Marston Staff Surgeon, read a paper on the Epidemic in Ireland, as it occurred among the troops. (*British Medical Journal*, July 6th, 1867, p. 17.)

Dr. MARSTON arranged his paper in two divisions. The first included a short medical history of the occurrences, arranged in their chronological order; the second took note, from a clinical point of view, of the morbid phenomena presented by the cases respectively. The disease had been variously named "pestis," "malignant typhus," "cerebro-spinal typhus," "malignant purpuric fever," &c. If the disease be essentially the same, although a variety of typhus, it is certainly not contagious as typhus. The facts, moreover, do not lend support to the supposition that it is a form of typhus. In the 22d Regiment typhus had appeared among the men after the appearance of cerebro-spinal meningitis. The disease was observed in the following varieties: 1. The worst and most speedily fatal cases presented symptoms of a profound blood-poisoning—the imperfect collapse, followed by a sopor and insensibility which speedily ran into coma; the paralysis of the pulmonary function, and the rapid appearance, as well as the number and extent of the spots. These things left no room for doubt as to the formidable nature of the malady and the inadequacy of the cerebro-spinal meningitis to explain all its features. 2. As to the cases in which the symptoms of a cerebro-spinal inflammation were the most prominent, delirium and other manifestations of a disordered intellect were neither so common nor of such grave import as those symptoms referable to the spinal system—the convulsion, the retraction of the head, the spastic contraction of muscles, &c.; and yet some of the best marked of these cases recovered. It is to be remarked also that there was no necessary relation between the occurrence, the number or the extent of the spots upon the skin, and the amount of intracranial and intraspinal mischief. In those cases which were very rapidly fatal, it may be that the morbid anatomist could not expect to find the same traces of disease or inflammatory action as in those less speedily fatal. Yet a patient may perish after fourteen hours' illness, and indisputable marks of inflammatory action may be present in the meninges of the brain and spinal cord. In none of the fatal cases examined were these parts normal; there was excess of serous fluid, vascular congestion, or actual extravasation of blood present; and a careful analysis of the cases leads to the inference that it is to the presence of those fluids about the respiratory nerve-centres that the imperfect

collapse and pulmonary distress are due. In very few cases, indeed, was there any manifestation of gradual deterioration of the health of those attacked. On the contrary, the suddenness of the seizure and the rapid progress of the case were generally remarked upon by those who recorded the cases. In the majority, a marked functional disturbance of the gastro-enteric system was evidenced in the vomiting and purging which ushered in the graver symptoms of the disorder. The perspiration was found to be acid to litmus in one case; the urine was of light color, of an average specific gravity of 1010, and non-albuminous in all the cases in which this was tested.

On the Recent Outbreak of "Febris Nigra" in Dublin.

By ROBERT D. LYONS, M.D., Dublin.

Dr. LYONS communicated the notes of several cases, and exhibited specimens of the spinal cord from two cases. He proposed to designate the disease "*Febris nigra*." He believed that the malady is allied to yellow fever, cholera, and, in a certain sense, to typhus, and to other diseases in which, without necessary physical lesion, a profound prostrating effect is exercised on the nervous centres, and through these on the blood. As to the causation of the disease, he referred to the general sanitary state of Dublin, which he described as bad as bad can be. When cases of this disease occurred in 1866, Dr. Lyons called the attention of the Lord Lieutenant and local authorities to them, as an indication of a marked change in the epidemic constitution, and predicted an epidemic possibly of cholera, which came in due time. This year he made a similar prediction, and he remarked that at least one case of cholera had already occurred in Dublin.

Cholera.

In the Cholera Conference at Weimar, April, 1867 (*British Medical Journal*, June 1st, 1867, p. 625), called by Profs. Griesinger, of Berlin, Pettenkofer, of Munich, Wunderlich, of Leipzig, and Hirsch, of Berlin, it was held that :

It was proved, beyond doubt, that cholera spreads through intercourse, and, therefore, discussion on this point was considered unnecessary.

It was agreed that military intercourse was more effectual than civil in spreading the disease.

No proofs could be adduced of the spread of cholera through merchandise of any kind; on the other hand, the meeting was unanimously of opinion that the soiled linen of cholera patients conveyed contagion, and should be handled cautiously. Animals coming from infected places must be regarded with suspicion.

The opinion that drinking-water is never injurious, was absolutely rejected. It was assumed as probable regarding any place, that the relations of the soil and moisture did not exert an essential influence on the presence or absence of the disposition of cholera to spread.

With reference to the utility of disinfection, it appeared that great importance is to be attached to it. The causes which render it nugatory were pointed out. Hitherto it has not been possible to find any disinfectants more certain, or better or more easily applicable than sulphate of iron and carbolic-acid. It was recommended that these be used in combination.

In the *Dublin Quarterly* for May, 1867, Drs. Heyden and Cruise present an elaborate and very valuable report on this subject, based upon the details of 197 cases that occurred in the Mater Misericordiæ Hospital of Dublin, in the summer and fall of 1866. The

paper is of interest, but too lengthy to transfer to our pages. We therefore merely give the conclusions to which they have arrived by their investigations.

1. The diarrhoea so prevalent amongst the inhabitants of localities actually suffering from cholera, is a premonition, and the earliest manifestation of cholera.

2. Cholera is a disease strictly preventible by sanitary and hygienic measures, and, in nearly all cases, curable in the stages preceding actual collapse.

3. The treatment which we have found most successful in the stage of choleric diarrhoea is sulphuric acid and opium; with sinapisms, external heat, and creasote water.

4. In collapse we have had more success with calomel given in large doses, than with any other medicinal agent. In several cases, besides those in which recovery took place, reaction set in under the calomel treatment, but death occurred in the consecutive fever.

5. We believe cholera to be contagious, but in a much less degree than the principal endemic contagious diseases of this country, viz., typhus, scarlatina, measles, and small-pox.

6. As regards individuals exposed to the contagion of cholera, a state of good health, with sanitary and dietetic precautions, afford a strong assurance of immunity from attack.

7. *Immediate* attention should be given to derangement of stomach, or laxity of bowels, during a cholera epidemic; and to insure this amongst the poor, house-to-house visitation seems indispensable.

The principal merit in the recent discovery of low organisms in cholera, is due to Dr. Klob, of Vienna, and Dr. Thomé, of Cologne. Both find in the cholera stools, and in the intestinal mucus of persons who have died of cholera, certain organic formations, named zooglœa, consisting of very fine nuclei surrounded by a gelatinous mass of various thickness. The nuclei undergo manifold divisions, and are developed into chains, from which innumerable large felted masses are formed in the intestinal mucus. The further progress of development of these organisms is not quite clear. Thomé obtained from them, after some time, large round cell-like bodies; and also vegetations like mould (*cylindrotentium*), from which sprang cylindrical spores, developing themselves into fungi.

Opinions as to the connection of these cells, threads, and spores can, however, for various reasons, be received with caution. Great difficulties stand in the way of the investigation, and a conclusive result must not be soon expected. Especially is it in some degree a question whether, as certain investigations already render probable, these organisms are to be met with in the blood; if it be so, their importance must be essentially increased.

By several members, especially Pettenkofer, attention was drawn to the presence of similar structures in moistened soil, in ground-water, in water-works, in drainage pipes, &c.; as well as to the relations which might exist between these organisms and the "cholera fungi," and to the means which might have an influence on these organisms and, with them, on similarly constituted living causes of disease.

Remarks upon Marsh Miasm and Typhoid Fever as occurring in West Kentucky.

Dr. J. W. THOMPSON, in a communication to the *Nashville Journal of Medicine and Surgery* (October, 1867, p. 155), has the following observations on this subject:

Now what part does malaria play in typhoid fever? I believe that we have from the position we occupy, being that of what is termed a strictly malarial district, a powerful predisposing or indirect cause of this disease. I am not prepared to say that this morbid cause and that which produces typhoid fever are the same; on the contrary, I believe this disease is produced, generated and developed by some special morbid agent differing from

malaria. How many hundreds, yes, thousands of cases, may be found where the parties have had ague, chills or fever, for years, and yet have never had typhoid fever? Malarial poisoning may be controlled, checked, by quinine. Who ever controlled or checked a case of typhoid fever with this remedy? Who has found the peculiar pathological lesion of typhoid fever in a case of chills, congestion, or bilious remittent fever?

Malaria places the subject in a good condition to have typhoid fever; it fits and prepares the system for it, just like the nurse whose system has been exhausted, enfeebled, worn down by constant vigils, loss of rest, &c., in the sick-room, is thereby rendered a fit subject for the disease, and is almost certain to have an attack in preference to those whose systems have not been thus debilitated. The morbid agents that generate typhoid fever and malaria, certainly have analogous effects, they co-operate, go hand in hand in the same direction, exerting their effects upon the system through the same channel, viz., the nerve centres—producing depression and its sequels—one cause overreaching the other, and going far beyond the point where the weaker cause has spent its force. So that, in miasmatic districts, we have typhoid fever presenting a more grave set of symptoms than obtains in localities where malaria is said not to exist; and we see irritative, intermittent and remittent fever, with pleurisy, pneumonia, dysentery, &c., readily running into or taking on the typhoid type. In keeping with this idea, some of our best authors have used the term “Malario-Typhoid,” or “Typho-Malaria.” I have spoken briefly of some of the effects of malarial poisoning. Are not the same train of effects observed in typhoid fever? Do we not have prostration, muscular debility, and general enfeebled condition of the system, with great nervous depression? This innervation or depression of the nervous and vital forces, I believe, to be one of the constant peculiar characteristic symptoms of typhoid disease. We frequently have this disease ushered in by a chill, with daily remissions for several days, sometimes for a week, so that it is difficult to say whether or not we have a typhoid case, and we flatter ourselves we can break it up with quinine. We may check this tendency to remission, and put a stop to the malarial part of the disease, but the true disease marches boldly and defiantly onward and downward, even to death, unless the enfeebled powers of the system are supported, and the disease by a judicious course of treatment conducted to a favorable termination.

In regard to special remedies in this disease, turpentine stands at the head of the list. I give it for its curative effect, commencing as soon as I see the dry tongue, with red tip and edges, hoping by its alterative effect upon the diseased glands to *prevent ulceration*, as well as to cure or heal the ulcers when formed. I continue its use as long as there is any tenderness in the bowels, or the condition of the tongue, and discharges indicate it. By this course I rarely see hemorrhage from the bowels, and am certain I have never had a case of perforation, from this fact. I have inferred that the turpentine has in the majority of the cases prevented ulceration, by altering or arresting the diseased condition of Peyer's glands. Why may it not do this?

Next come opiates, to procure rest and quiet nervous excitability.

Quinine, for its stimulating, tonic, and antiperiodic qualities, cannot be dispensed with. I always give it at the commencement, because of the difficulty of forming a correct diagnosis at the outset of the case, and with the view of checking the operation of the little *handmaid—malaria*, and in the latter stage when the disease subsides into remissions.

In regard to arterial sedatives, such as verat. virid., tart. emetic, aconite, &c., I seldom use them; febrifuges I have not much faith in, except sponging and cold applications to the head.

I have relied mainly upon the nourishing diet, stimulants, opiates, turpentine, and quinine, and have seldom been disappointed in the result.

I feel confident that the supporting plan of treatment is applicable to nearly all the diseases of this country, especially pleurisy and pneumonia, erysipelas, diphtheria, and fevers generally.

V. ANIMAL AND VEGETABLE PARASITES.

The most Prominent Symptoms caused by the Trichina Spiralis.

Dr. J. H. FLAMM gives the history of four cases of disease caused by trichinæ, in the *Wiener Med. Wochenschrift* for Sept. 14th, 1867, No. 74, and sums up the most prominent symptoms as follows :

CASE I. Pain in the nape of the neck, in the throat, and in both forearms, accompanied with swelling of the left hand, difficulty in swallowing, pains in the legs, particularly in the calves; *œdematous swelling of the eyelids*, persistent difficulty of breathing, pain in the side, vomiting, diarrhœa, profuse sweating, pruritus of the skin. Duration of the febrile symptoms, with great acceleration of the pulse, 12 days.

CASE II. Pain in the nape of the neck and throat, very great difficulty in swallowing; pains in the arms, legs, and small of the back; bloating of the face, with swelling of the eyelids; persistent dyspnœa, tormenting bronchial catarrh, diarrhœa, frequent sweating, hemorrhage from the bowels at the beginning of convalescence. Duration of the fever (pulse 120) 14 days.

CASE III. Pains in the nape of the neck, throat, difficulty in swallowing, bloated face, vomiting, diarrhœa, frequent sweating. Duration of the fever, with great acceleration of the pulse, 8 days.

CASE IV. Pain in the nape of the neck, in the throat, difficulty in swallowing, pain in the back, bloated face, vomiting and diarrhœa (preceding the fever), frequent sweating. Duration of the fever (pulse 130) 8 days. In all the cases the intellect was undisturbed. The fever attending the symptoms was not ushered in by any marked rigors. The fever was preceded by indigestion, lasting some 8 days, and a marked lameness in the feet, which compelled the patients to seek the bed. During the whole of the fever there was but little variation in the pulse. It generally ranged between 120 and 130. In typhus the temperature usually rises with the pulse; in these cases no great rise in temperature was observed, neither was there that wearied and exhausted expression of the face so common in typhus, but rather one of disquietude. A careful examination of the symptoms, especially those relating to the condition of the tongue, bowels, expression of the face, condition of the intellect and spleen, will enable one to exclude intermittent and typhus, with which latter disease the presence of trichina has so frequently been confounded.

Tænia Mediocanellata.

A case in which fourteen yards of *tænia mediocanellata* were voided with the head, at the Middlesex Hospital (under the care of Dr. MURCHISON), as reported in the *British Medical Journal*, August 3d, 1867, p. 86 :

Every one is familiar with the ordinary tapeworm, the *tænia solium*, with its proboscis, and its circle of hooklets; but it is not often that one has the opportunity of seeing in this country a specimen of the unarmed *tænia*, the *tænia mediocanellata*. In some countries,

on the contrary, as in Austria proper, this latter kind of tapeworm seems to be the only indigenous one. Breuser and Wardruch never, in fact, met with an instance of *tænia solium* in Vienna; and it was not until Rudolphi sent a specimen of the parasite to the former great helminthologist, that he acknowledged the presence of a circle of hooklets round the head of a *tænia*, and then fell into the error of believing that his specimens were all toothless old creatures.

A woman, who was lately admitted into the Middlesex Hospital, under Dr. Murchison's care, stated that, for the last eight years, she had been suffering from unpleasant abdominal sensations, colicky, flatulent pains, and occasional tendency to fainting, which she ascribed to the presence of a tapeworm, of which she had, on several occasions, passed unmistakable fragments. She was, for a few days, given five-grain doses of the extract of kamela (made with the powder of the *rotleria tinctoria*); but this only brought away a few pieces of the worm, about three yards altogether. On these fragments being examined, suspicion was aroused that they belonged not to the ordinary *tænia solium*, but to the unarmed, or *tænia mediocanellata*, on account of the fat and plump appearance of the segments, and the more numerous ramifications of the uterine organs, as pointed out by Küchenmeister. Dr. Murchison then ordered a drachm of the old remedy for tapeworm, the oil of male-fern, to be taken fasting in the morning; and the result was satisfactory. The patient got rid of her old enemy, and voided at one time eleven yards of the worm, including the fine delicate neck, surmounted by its small head, of about the size of a pin's head. On placing this under the microscope of a low power, the well known characters of this variety of tapeworm were immediately recognized: absence of snout (*proboscis* or *rostellum*) replaced by a central disc, absence of the circle of hooklets, with four large suckers or discs on the head.

According to Dr. Thudichum, in a report drawn up for Her Majesty's Privy Council, and published in the Seventh Report of the Medical Officer of the Privy Council, the *tænia mediocanellata* is developed from the *cysticerci* which inhabit the flesh of calves or heifers. He states that only young calves can be infected with the *cysticerci* of this *tænia*, and that their development is completed in about three months. But, as we do not know anything about the vitality of these *cysticerci*, it may be that they may continue to live in the adult animal. In the present instance, the patient declared that she habitually ate beef and mutton, and made no mention of veal. At one time she used to eat pork frequently; but the *cysticerci cellulosa*, which occasionally infest the flesh of pigs, do develop the *tænia solium*, not *mediocanellata*, when they get inside man. It may be, therefore, that either the *cysticerci* of the calf may continue to live in the adult ox, or that the *tænia mediocanellata* may be developed from *cysticerci* of the sheep, as it has been asserted by some.

Davaine has asserted that the *tænia mediocanellata* is never met with in England; but it is a somewhat curious fact, which we state on Dr. Murchison's authority, that all the tapeworms which have of late been passed by in-patients of the Middlesex Hospital are all of this variety. Their species has been authenticated by Dr. Cobbold, our first English authority on helminthology.

Parasitic Animals.

The following account of some rare parasites on the human subject, is from the *Atlantic Med. and Surg. Journal*, from a communication of Dr. N. B. DREWRY.

In July of the present year, Mrs. B—, æt. 28 years, of full habit and florid complexion, and active life, applied to J. R. Cleaveland, S. D., of this place, for relief of

toothache. Finding a cavity, he proceeded to treat the nerve by the application of arsenic. Failing to allay the pain in this way, he resorted to mechanical means of impressing or destroying the nerve, and was finally successful in relieving the suffering. Very soon, however, the pain returned, and as it was desirable to avoid extraction, if comfort could be obtained otherwise, the instrument was again introduced into the cavity of the tooth, and, after giving it a rotary motion, was removed. On examination of the substance adhering to the instrument, a living animal, a worm, was found. The parasite measures about four lines in length and one in thickness, with a head larger than the transverse measurement of the body, and composed of a firm, horny substance. Since the removal of the worm from its cavity, the tooth has not been at all painful.

A still more remarkable case of local disturbance by an epizoon, presented itself to me, one month after the case above-mentioned was treated.

Mrs. G——, æt. about 43, healthy and corpulent, called, August 2d, 1867, at my office, to consult me in regard to a painful affection of the finger, very much resembling ordinary whitlow. The pain, she said, was periodical, deep-seated, and of a gnawing character. Seeing nothing unusual in these symptoms, I pronounced the case a felon, and gave the usual advice in such cases. She declined, for the time, having it opened, but applied emollients, used opiates internally, &c. Two weeks passed in this way, without any material change in the condition of the part, except a slight pointing at the centre of the swelling. Pricking this portion of the cuticle with an ordinary needle, she imagined, though without much discharge, gave some comfort. With the hope of obtaining entire relief in this way, she still refused to have the finger laid open with a bistoury. In two or three days after her own operation with the needle, the suffering became so intense, that she resorted to the same mode of relief. Extending her puncture, perhaps, further than before, she found beneath the attenuated skin a living worm, and extracted it. The pain subsided at once, and the swelling, and other evidences of local disease, gave way.

The worm thus extracted, and to which the painful condition of the finger is attributable, in every respect resembles that obtained from the tooth of Mrs. B——, a month previously.

CLINICAL MEDICINE.

I. GENERAL AND CONSTITUTIONAL DISEASES.

Results of Experiments in Inoculating Tuberculous Matter.

By DR. FELTZ, of Strasbourg (Gaz. Med. de Strasbourg, Oct., 1867.)

WITHOUT giving the whole of this article, we place below an experiment or two and the summing up of the author.

1st Experiment.—On the 8th of December, 1866, we inoculated three little rabbits, from fifteen days to three weeks old, with tubercle taken from a woman who died in the service of Professor Hirtz. The inoculation was made by means of a lancet, behind the left ear, in the presence of Prof. Michel. The lung had been examined under the microscope by MM. Michel and Morel, professors in the faculty. Having deposited the little tuberculous mass in the subcutaneous cellular tissue, we closed the wound with a silk thread, to prevent the escape of the inoculating matter. A fourth rabbit of the same brood as the preceding was shut in with them and their mother, in a locked cage.

Two of the three inoculated rabbits died at the end of eight days of an erysipelas, which extended from the wound over the entire head; the capillaries were engorged with coagulated blood, having already undergone regressive modifications. Autopsy revealed no visceral lesion. The third rabbit lived six weeks. The wound was not healed until at the end of the seventh part of that period. On autopsy we found in the lungs seven or eight small whitish granulations, which in form resembled tuberculous granulations, but which, examined under the microscope, were recognized as nothing more than small abrasions, containing dry pus in a state of fatty degeneration.

M. Michel, who likewise examined the lung in question, found pus simply, and nothing like tubercle.

The wound, dissected out carefully, showed a marked induration on its borders, an evident symptom of preceding inflammation. The inoculated mass could not be found.

2d Experiment.—On the 26th of March, 1867, we recommenced our experiments; but, instead of inoculating with true tubercle, we used caseous matter, obtained from a man who died of caseous pneumonia in the service of Professor Schützenberger. We proceeded as in the first case, but we obtained no result. Two of the rabbits died at the end of fifteen days, without presenting, on autopsy, anything more than signs of enteritis, and suppuration, with deglutination of the inoculating wound. The third rabbit, killed at the end of the six months, offered no other trace of disease than a sensible induration on a level with the wound of inoculation; but there were no traces of the inoculated matter. It seems that the Doctor then proceeded to inject tuberculous matter into the pulmonary and general circulation. We will give his general conclusions as regards the whole subject:

In bringing together the facts deduced from our experiments, we believe we can draw the following conclusions:

1st. The inoculation of tubercle taken from dead persons, will establish lesions in different parts of the body.

2d. The pathological productions distant from the point of inoculation are not resultants of the tubercle, to speak correctly, but false induration (*infarctus*), or of abscess; the microscope alone can determine this difference.

3d. These abscesses have for their point of departure the capillary fibrinous clots (*embolies*) or formations, occasioned by inflammation of the wound, or occurring in the circulation, by rupture of the capillaries, on a level with the place of inoculation. As for the rest, M. Collin has already demonstrated that transmission can be effected through the lymphatics.

Therapeutics of Pulmonary Consumption.

Dr. HÉRARD, in his concluding clinical lecture on pulmonary consumption, at the Lariboisière Hospital (the Paris correspondent of the *British Medical Journal*, August 10th, 1867, p. 112, says), made use of the following remarks on the therapeutics of that disease :

I do not intend to pass in review the numberless medicaments which have been vaunted as possessing the power of curing tuberculization of the lung. It is certain that we do not possess any specific; but I am convinced that a well-regulated treatment, growing naturally from the ideas I propound on the nature and pathogenesis of pulmonary lesions, may give the patients considerable relief, prolong their days indefinitely, and even produce a cure.

The principal indications afforded by the therapeutics of pulmonary phthisis may be reduced to three.

1. The prevention of the development of miliary granulation. For this end our means are very limited. As I have already remarked, granulations proceed from a general condition, the very essence of which is unknown to us. We should, however, study two kinds of means—the curative, and the preventive. Amongst the latter, hygiene plays a principal part—both alimentary and respiratory hygiene. It has long been proved that a good alimentary regimen should be the entire treatment adopted in pulmonary phthisis. I quite concur in its great importance. A patient should have broiled or roasted meat, or raw meat in a palatable form, with a tonic draught of which alcohol forms the base, &c. But we must not exaggerate the value of these agents, which, according to some writers, have produced veritable miracles. Sometimes this plan succeeds in re-establishing the patients for a time, but they gradually become tired of the regimen; and it becomes so intolerable, that it is perforce relinquished, only a fleeting amelioration having been obtained. Some other aliments produce good results: I mean milk and cod-liver oil, though the last is often classed as a medicine. M. Bouchardat has theoretically examined the fatty agents used in the treatment of phthisis. Clinical experience has led me to indorse his opinions. Milk and cod-liver oil probably act by the large quantity of fat which they introduce into the animal economy; the oil also containing a certain quantity of iodine, which may have a salutary influence. I prefer the pale oil: the patient takes it more willingly, and can longer continue the use of it. In order to cover the disagreeable flavor of the oil, I frequently give it with cinchona wine. There are many other means familiar to you of producing the same result. The oil should be given before meals. As a rule, this is the best time to give all medicines—the fluids which flow into the stomach during the process of digestion rendering absorption more easy. The dose should not be too large; two to four spoonfuls daily are sufficient; but the administration must be long continued. It should be discontinued during great heat, as the dislike of invalids to fats then frequently becomes invincible.

In conjunction with alimentary hygiene, we find respiratory hygiene, which is composed of all the conditions constituting climate. The reason that this therapeutic agent does not obtain all the favor it merits is, that it is not used with the care and precaution needful to obtain good results. It is objected to those who recommend to consumptive patients removal to a warm climate, that phthisis is as common in warm as in cold countries. The reason of this fact is, that climate, while exercising a primary influence, is not the only cause of pulmonary phthisis. In warm countries, many persons are living in deplorable hygienic conditions. Besides, is there not a great difference between living constantly in a warm climate, or going during the winter to Mentone, Cannes, Nice, &c., where the heat in the summer is debilitating? The choice of abode is also of great importance; it is not enough to say to the patient, as is frequently done, "Go to the South." For instance, Marseilles is a very bad dwelling-place. The mistral there causes variations of temperature most pernicious to phthisical patients. It is also necessary to indicate that, in the most favored localities, precautions must be taken. As a rule, invalids should go out only in the middle of the day; and, as it is desirable to know the climate of the place in which one is residing, it is advisable to refer the patient to the local medical man. The value of sea-air has been much discussed. Laennec spoke highly of its beneficial influence. M. Rochard, on the contrary, believes that sea-air and sea-voyages are very injurious to phthisical persons. Doubtless, for sailors, whose labor is very hard, who are exposed to all the vicissitudes of the weather, and who are placed in the most deplorable hygienic conditions, sea-voyages are injurious; but, if we prescribe a sea-voyage in a mild and sheltered latitude, the invalid being also well placed in a hygienic point of view, a sea-voyage may produce very good results.

Some medicaments may directly attack the diathesis; but they all act as tonics or stimulants. I repeat, we possess no specific. Sulphur, for example, may be very useful, either in powder or in the form of sulphurous water; but it must be administered with the greatest care. In cases where the symptoms are somewhat acute, it might produce congestion and hæmoptysis. Arsenic increases flesh, and seems to lessen congestion of the lungs. Iodine, which has been misused, is nevertheless very useful, taken internally in small quantities, mixed with the food, or in the vegetables, which contain it in varying proportion. M. Piorry highly praises iodine in inhalations; but this agent must only be used with the greatest precautions, for fear of producing too great excitement. Phosphorus has been by some physicians very erroneously considered as a specific. However, the hypophosphites of soda and lime, in doses of one or two *grammes*, may sometimes produce a favorable action. Sea-salt has been much vaunted by M. A. Latour. If given to goats, mixed with their usual food, it produces milk easy of digestion, and affording an excellent food for consumptive persons. This milk must be taken in the following manner. The patient drinks about a *litre* of it in the twenty-four hours by mouthfuls, and the appetite for meals is not at all impaired.

Second indication. To combat the congestions and inflammations of the pulmonary parenchyma. We possess for this purpose really powerful agents. I rarely employ bleeding; and many physicians rebel against the ideas of Broussais, and never resort to it. I think they have gone too far. It is certain that, at the commencement of phthisis in plethoric subjects, when the symptoms are very acute, one may obtain good effects from the application of leeches or cupping, with scarification. The utility of tartar emetic has been recognized since the days of antiquity. With Laennec's views on the tuberculization of the lung, it would be impossible to explain to one's self the action of this medicament. But with the views which I maintain before you, and which consist in recognizing that tuberculosis is accompanied by true pneumonia, the action of antimonials is easily explained.

The medicament justly and highly esteemed by MM. Monneret and Fonsagrives ought to be employed in soothing doses. *Digitalis* has the same action; it is most useful in cases where phthisis is complicated with palpitation or hypertrophy of the heart, which encourages hæmoptysis.

The atmosphere of cowhouses, so strongly recommended by some physicians, appears to me to operate by maintaining a mild and moist temperature about the patient. In the same way, inhalations of watery vapors have been found useful. Trousseau had a room in his ward specially devoted to this purpose. His cases immediately experienced great relief, less heat in the chest, and a diminution of the cough. I also attach great importance to the use of cutaneous counter-irritants, tincture of iodine, blisters, &c. I am persuaded that the cautery is very useful; it is a therapeutic agent from which I have obtained excellent results. When operating on females, who dislike the scars about the clavicles, I place them in the axilla. I cannot admit that there is any antagonism between anal affections, fistulas, &c., and pulmonary phthisis, as Aran asserted. On the contrary, I think it advisable to combat them by every means in our power. Fistula of the anus is frequently incurable; but, if there is a probability of cure, the operation should be performed. It is clear that the patient is thus relieved from one cause of exhaustion, of painful suffering, and indigestion.

Third indication. To combat local or general symptoms which become predominant, painful, or distressing to the patient.

To conclude: What is to be thought of the curability of pulmonary consumption? With the power of using many medicines, should the physician abandon the unhappy patient, under the pretext that there is nothing to be done? On the contrary, much may be done. Frequently the disease commences in one lung; and the previous employment of the means I have indicated to you may prevent its spreading to and invading the other organ. The lesions, tubercles, pneumonia (caseous), may pass into the cretaceous state. This is one method of cure; but, even if the cavities are formed, they may retract themselves, become filled with chalky or gelatinous matter, or clothe themselves with a false membrane, and so result in an apparently complete cure. Finally, where the extent and gravity of the lesions leave the physician no hope, he must endeavor to afford the patient mental consolation. How many consumptive patients remain in ignorance of their sad condition to the last moment of their life, from their physician's assurance that they are only suffering from inflammation of the lungs.

Raw Flesh and Brandy in the Treatment of Phthisis.

In a paper recently presented to the Paris Academy of Sciences, M. FUSTER presents the following conclusions, based on two thousand additional cases observed by himself and others:

1. The exhibition of raw beef and mutton, and of alcohol in doses varying according to circumstances, arrests the progress of pulmonary phthisis and other consumptive diseases. Under the influence of this mode of treatment, strength is restored, the countenance recovers its animation, appetite returns, and the patient gains flesh, a fact of which conclusive evidence is afforded by the increase of weight. In a month, or even in three weeks, in several of my cases, the body gained four, six, eight, and even as much as twelve pounds.

2. This general improvement of the system, aided by appropriate treatment of the leading symptoms, checks the hectic fever, diarrhœa, and night-sweats.

3. When these complications have yielded, amendment of the local condition of the

lungs, or rather diseased organs, sets in, and the advance of cicatrization can be ascertained by percussion and auscultation.

4. The efficacy of the treatment is not, however, equal in all stages of the diseases in question. In the third stage the improvement in general is confined to a prolongation of life, the inevitable issue being merely postponed.

5. In the second stage only can the treatment be considered as really curative; provided, of course, all the necessary hygienic precautions I have dwelt on, on a former occasion, are strictly attended to.

6. Of all atrophic diseases in which the treatment is applicable, that in which the greatest measure of benefit is obtainable is pulmonary tuberculosis in all its stages; it is however, highly beneficial in every form of anæmia, whether resulting from hemorrhage or from spermatorrhœa; at the conclusion of acute affections, especially typhus and typhoid fever; in the last stage of leuchæmia, albuminuria, and diabetes; it is also frequently successful in pyæmia, paludal cachexia, chronic nervous fever, and, in general, in all protracted morbid conditions in which repair is obviously unequal to the expenditure of the system.

Influence of the Alpine Climates on Pulmonary Consumption.

DR. HERMANN WEBER, F.R.C.P., Physician to the German Hospital, London, states in the *British Medical Journal* for July 20th, 1867, p. 41, that consumptive diseases in their earlier stages are favorably influenced by the removal of the patient to higher elevations, and answers some of the principal objections urged against this plan of treatment. He gives illustrative cases in the succeeding number, p. 58.

Phthisis in Peru.

In an article on Health Resorts in the *British and For. Med.-Chirurgical Review*, we find the following:

On the sea-coast of Peru, as on that of the Gulf of Mexico, incipient tubercular phthisis is one of the commonest of pulmonary affections. From time immemorial, however, it has been known to the natives that a removal of phthisical patients, even in the stage of well-marked ulceration and cavities in the lungs, to the inland valley of Jauja, at a height of 10,000 feet above the sea, was followed by an almost invariable suspension of the disease, —a fact which is quite corroborated by the practice of physicians at the present time. From the statistics of Dr. Fuentes, of Lima, published in 1858, it appears that nearly 80 per cent. of the cases of phthisis sent to the Jauja valley are cured. So forcibly has this fact been brought before the Peruvian Government, that it has established in this valley a military hospital for consumptive patients, and especially for native Indian soldiers, who in the capital are singularly prone to phthisis. Indeed, of the whole annual mortality of Lima, no less than twenty-two and twenty-nine thirty-ninths per cent. is attributed by Dr. Fuentes to this disease. So that, as Dr. Smith remarks, we must admit that the Peruvian physicians have abundant opportunity of testing the various modes of treating it; and the unanimous opinion at which they have arrived as to its curability by a removal of the patient to the Jauja valley, leaves no doubt as to the well-founded nature of the reputation which that district enjoys. How much of this curative power may be due to the moral influence exerted by its scenery and associations, it would be difficult to say; but a nearer approach to Elysian felicity than the lives which its population are described as leading, it would be probably impossible to find in any less-favored land. The harvest being home,

we are told, the whole rural population rest from their agricultural labors for eight months in the year, which they give up entirely to amusement and feasting, trusting to the rain of heaven during the other four months of the year to fertilize their land and yield them more food than they require. Surely Dr. Johnson must have had this valley in his eye when he wrote his pleasing fiction of "Rasselas," for no other of which we have ever heard realizes the physical conditions under which the Prince of Abyssinia sought for the perfection of human happiness. And we may mention for the benefit of such of our readers who, as valetudinarians or philosophers, may feel an interest in knowing more about this charming region than we are able to tell them, that if the project of running regular steamers up the Amazon from Pará, for 2500 miles from its mouth, which has just been started by an American company, becomes an established fact, they will be able to transport themselves into it, almost without changing vessels, after a voyage which, though long, is not tedious nor debilitating, and which will carry them through some of the most magnificent scenery that the world can produce.

Choroidal Tuberculosis.

The Berlin correspondent of the *British Medical Journal* for June 29th, 1867, p. 773, remarks :

Dr. Conheim's observations, pointing to the very general, if not constant, occurrence of tubercular nodules in the choroidal tunic of the eye, in cases of acute miliary tuberculosis, afford an additional illustration of the assistance the physician may expect to derive from ophthalmoscopic investigations in the diagnosis of constitutional disease. Previously to January last, when that distinguished pathologist, at present the assistant of Virchow, first communicated a paper on the subject to the Berlin Society, only four cases of choroidal tuberculosis had been recorded in medical literature; so that it had come to be regarded more as an anatomical curiosity, without any claim to practical importance.

In every instance, at least seven other internal organs were the seat of tubercular eruption. The lungs were invariably affected, and, without exception, also the thyroid gland, which has thus forfeited the immunity it was believed to possess from the occurrence of tubercular growths.

The ages of the subjects ranged from six months to fifty-nine years. With one exception, both eyes were affected. In two cases, a solitary tubercle was found on one side; in the majority, from four to eight were seen; in one case, as many as forty were counted in one eye, and fifty in the other. They were disseminated all over the background, either singly or in groups, with occasional tendency to confluence. Where only a single nodule or very few were present, they were in close proximity to the posterior pole of the eye; in one case, just behind the macula lutea. The majority varied in size from 0.6 to 22 millimetres in diameter; all above 0.6 millimetre in diameter were distinctly prominent above the niveau of the choroid. The larger nodules lay quite denuded of pigment immediately beneath the retina, but set in delicate rings, much darker than the surrounding tunics. Nodules below 0.8 millimetre in diameter were covered by unchanged epithelial cells, and therefore not visible prior to their removal. It is possible that the more favorable conditions obtaining during ophthalmoscopic illumination might nevertheless admit of their detection; and, should a retinal vessel happen to cross a nodule, the phenomena of parallax dislocation which could be produced in consequence of the resulting prominence, amounting to one-fifth of a millimetre even in the case of the smallest tubercle, would be of material assistance for diagnosis. The diagnosis of acute miliary tuberculosis is known to be frequently beset with considerable difficulty; and as its recognition,

although, in the present state of therapeutics, only for the sake of prognosis, is of extreme importance, the physician will not despise the aid which the ophthalmoscope may be expected to afford for his guidance, it being most probable that no case of the disease will be found to run its course without choroidal implication.

Treatment of Cholera.

Dr. S. S. TODD, of Kansas City, Missouri (*Cincinnati Lancet and Observer*, July, 1867, p. 385), gives the following notes of his experience in the treatment of cholera :

First. Ten grains of mass. hydrarg. and a large plaster of the cer. cantharides, applied early over the stomach and bowels. To be removed before vesication, if the symptoms abate. It is designed that the active principle of the fly shall be absorbed.

Second. The following mixture :

R. Tinct. cantharid.,	. . . . .	ʒij.
Acid sulph. dil.,	}	aa ʒij.
Syr. tolutannus,		
Tinct. opii, .	. . . . .	ʒij.
M.		

For an adult, two teaspoonfuls of the mixture in a wineglassful of water, every half hour or hour. If rejected by the stomach, repeat *at once*, until retained. When the more alarming symptoms abate, administer more sparingly.

This is intended for use prior to collapse, and as soon as diarrhoea or vomiting first occurs and immediately following the mercurial.

For collapse, the same, except that the tincture of opium is omitted, and the dose increased to three teaspoonfuls. One of the most remarkable and invariable effects is the immediate cessation of cramps, if they have been present. The pulse, too, is increased in fulness and the heat of the body augmented. This is often seen temporarily in those who are beyond recovery. How far these results are due to the sulphuric acid I am unable to say, as I have not used the cantharides except in conjunction with the remedies named. No alcoholic stimulant is allowed, and cold water is given by the teaspoonful only. The extremities should be kept warm with a dry heat. They should be well covered, and no rubbing allowed. The patient should take his bed on the appearance of the first symptoms, and the most absolute quiet of the patient and surroundings should be preserved. If the case is dangerous, he should not even be allowed to turn over in bed, and should be prevented from getting up to have his evacuations, and urged to restrain them as long as possible. The first dose of the medicine is usually rejected, but if it is repeated immediately it will be retained. Strangury is rare, and if produced, is easily removed by a dose of morphia. I had but two cases where strangury resulted, and in both the cholera symptoms were of mild character.

At the meeting of the Medical Society of the State of Ohio, June, 1867 (*Cincinnati Lancet and Observer*, p. 401), Dr. John Davis read a paper on Cholera, and in connection with it reported the treatment and result of one hundred and sixty cases that he had treated during last year, in the city of Cincinnati, his place of residence. The plan of treatment was, to give calomel, tannin, and piperine, combined with enough chalk and sugar to prevent the dose being too pungent. Each dose contained one grain of calomel, two grains of tannin, and one of piperine. The doses were given every ten or fifteen minutes, even in violent cases in the first stage. The calomel was only continued till the stools were of some consistence and of a dark color. The astringent was discontinued when the patient had passed three or four hours without a discharge. The piperine, per-

haps, combined with Huxham's tincture or iron, can be used till reaction was established. For the vomiting, mustard over the stomach; and when this does not answer, small doses of creasote and chloroform should be given. Of the one hundred and sixty cases treated only eighteen died.

The Cause of Intermittent Fever.

The *Boston Medical and Surgical Journal* gives the following summary of the views of Dr. SALISBURY:

In the course of a recent correspondence with Dr. Salisbury on the subject of his discovery of the cause of intermittent fever, we have received some information of much interest which we are permitted to lay before our readers.

The question has been asked, granting that the cryptogamous plants which Dr. Salisbury regards as the cause of intermittent fever are found growing in districts confessedly malarial, do not malarial diseases occur in regions where these agroids are not found? To this inquiry Dr. Salisbury replies:

"I have not found the Ague Palmella growing to any extent in any locality that is not malarial; and I never have found a malarial district or locality that did not produce one or more species of the plants described in my monograph. . . . I have much very interesting matter, confirmatory of what has been given to the public, that is not yet published. . . .

"All my experiments thus far go to substantiate the statements already published. So far as I have heard from careful and honest observers, men who can pursue investigations without prejudice and without being biassed by preconceived views and theories, my labors have been sustained.

"The Ague plants develop on and just beneath the surface of soils, in certain localities, where the soil and hygrometric conditions are suited for their development. They grow as prolifically upon a sand-bed as upon boggy soils, providing the proper conditions are present. They begin to develop in profusion in this climate (Cleveland, Ohio) early in July, and continue to grow luxuriantly until the early frosts.

"As the plants mature they burst and discharge their spores, which accumulate in vast multitudes on the surface of the soil, presenting the appearance often of an incrustation of flour, lime, or brickdust, thinly or thickly scattered.

"I have plants collected from all parts of the West, carefully preserved in tin boxes and labelled. From these I have made many drawings, which are nearly ready for publication."

We have received from Dr. Salisbury specimens of two of his species of Ague plants, the *Gemiasma rubrum* and *verdans*. The former reached us in an unsatisfactory condition, but of the latter we have had the opportunity of studying, under the microscope, the growth to maturity and bursting of the spore sacs in the most satisfactory manner. It corresponded in its various stages most precisely with the drawings which Dr. Salisbury was kind enough to send us. In answer to an inquiry whether he finds these plants in the blood—as the impossibility of such a thing without very grave, if not fatal results, has been urged as one of the points of criticism of his theory, and in objection to his statement that he had found them growing in the urine—Dr. Salisbury informs us that he does, and accompanies his statement with a drawing, representing them as they are found in the circulation. They differ in no respect from the plants in their natural habitat except in the want of color. They appear as large cells, with "double walls, with a narrow intervening space. This is not always evident, but generally is. There is no nucleus. The

plants are filled with spores and spermatia. They are from two to four times the diameter of colorless corpuscles, and stand out with a strong outline like the *ova of entozoa*. I wish I could show you a plant in the blood; you would never mistake it afterward for anything else, it is so peculiar and distinctly marked.

"One very interesting fact I have noticed—which explains the use of quinine in ague—and that is, where patients have taken it for some time and in considerable doses, the plants in the blood seem almost entirely empty of spores. It seems to destroy their power to produce the reproductive elements. The paper already published is only a brief of my investigations. I intend soon to have something more ready."

All this is very interesting, and is evidence of the thoroughness of Dr. Salisbury's investigations, while it fully substantiates his claim to all the honor belonging to this very remarkable discovery. As an evidence of the extent of his researches on this and kindred subjects, we quote one more passage from one of his letters:

"I have some matter," he says, "connected with blood examinations (microscopic) that is of very great interest to me, and I think will equally interest the profession. This I am getting ready for publication. I have made, up to the present time, over *thirty-five thousand* careful microscopical examinations of blood, where I have made drawings and notes. The developments, in throwing light upon disease, are most interesting."

This is comparatively a new field of pathological study, and the profession will await with impatience the results of such unparalleled research.

Quinine as a Prophylactic against Malarial Fever.

BEING AN APPENDIX TO THE THIRD REPORT ON TYPHOID MALARIAL FEVERS, DELIVERED TO THE SURGEON-GENERAL OF THE LATE C. S. A., AUGUST, 1864.

Dr. JOSEPH JONES, Professor of Physiology and Pathology, Medical Department, University of Nashville, in a paper just published in the *Nashville Journal of Medicine*, believes that quinine, taken during exposure to the exhalations of miasmatic regions, will, in most cases, ward off fever entirely. If fever attacks those to whom the quinine has been regularly administered, its severity and duration will be far less than in those who have not taken the quinine; it therefore not merely wards off disease, but renders it less powerful and destructive when present. To be entirely efficient the quinine must be administered for some time, at least ten days, after exposure to the causes of fever.

Case of Hydrophobia—Use of Bromide of Potassium.

By Dr. JAMES I. ROOKER, Castleton, Ind. (*Cincinnati Journal of Medicine*, June, 1867, p. 350.)

[As the following case has attained no little notoriety through the columns of the public press, we have thought it best to present the report, so each reader can judge of the case for himself.]

Some nine weeks ago, Miss Selinda E., an intelligent young lady of twenty-two years, was bitten by a rabid dog, which she was endeavoring to drive out of the house. The wound was on the finger, and so slight, that it excited no alarm, although the dog was known to be mad. As usual in cases of hydrophobia, she thought nothing more of the matter until the morning of Tuesday, the 26th of March, when on going to wash her face, the contact of the water made her shudder, as she described it. (She had previous to this, complained of a stiffness of the muscles of the neck, with some difficulty in swallowing, aching of the bones, restlessness, disturbed sleep, and frightful dreams of

crossing deep water, &c.) The fearful truth flashed on her instantly, but, being a lady of great self-command, she simply said to her sister, "I am mad—I can't live." She labored during the day, with some increase of the horrible symptoms, but nothing visible to others; and on the following morning, the 27th, on sitting down to the table, she remarked to the family, "You must take that water from the table, or I cannot eat." The water was removed, when she ate a little, and afterwards proceeded to work as usual. She continued through that day as before, but with a decided strengthening of her repugnance to water, an increase of the stiffness of the muscles of the neck, difficulty of swallowing, aching of bones, restlessness, inability to sleep soundly, and with slight twitching of the muscles of the arm of the hand which was bitten. She also remarked, that the very sight of water caused a tingling sensation throughout the entire body; and that the glistening face of the clock affected her in the same manner.

On Thursday, the 28th, she was too far overcome to work, and while standing on the floor, conversing with some of her family, she began grinding her teeth, and directly after fell down in a fit, with foaming at the mouth, her teeth gnashing, and her body somewhat convulsed.

The neighbors, hurrying in, found her on the floor near the fire (which she had previously kindled, as she complained of severe coldness of body), in this terrible condition. But she bit so furiously at every one who touched her, that it was impossible to do anything with her; she was left lying till the spasm had passed off, and was then placed in bed.

When I arrived at 2 P. M., Thursday, 28th, she was again convulsed and senseless, uttering short *barking* sounds, and *snapping* at everything that approached her; a tenacious saliva issued from her mouth, and she seemed to take delight in spitting at those around her. She had a wild and haggard expression, a dilated pupil, pulse 90, skin warm and covered with a clammy sweat, and a peculiar fœtor of breath.

I proceeded then to administer morphia, to relieve her agony. In a lucid interval she remonstrated, saying, "I must die, I know it, and I want to die in my senses; so don't stupefy me with medicine." Immediately on the water touching her lips, it threw her into a spasm; and it appeared impossible for her to swallow it; a draft of cold air, or a sudden touch of hand, appeared to have a similar effect. After the spasm had passed off, I proposed another dose of morphia, as she did not succeed in swallowing the first. She consented, but added, "You must not give it to me with water." The paroxysm continued with the same frantic efforts to bite. She bit her hands, and bit pieces out of the pillow and bedclothes. At this time, my friend, Dr. Ruddle, of Allisonville, was called in, and to whom I am much indebted for assistance in the early stage of the case. The following treatment was agreed upon:

R. Potas. Bromid.,	gr. xv.
Morph. Sulph.,	gr. ʒ.
Hydrarg. Submur.,	gr. v.

To be given every two hours.

With great difficulty we succeeded in getting her to swallow this, in small quantities of water, which produced frightful spasms of the muscles of the œsophagus and larynx. In a lucid interval, she complained of a choking sensation, but no pain. I left her at 6 P. M., in much the same condition as I found her, with orders to have the medicine administered every two hours, if possible.

March 29th. Paroxysms coming on about every hour, but not of so severe a nature, and she does not appear to have so much dread of water. Slept as much as an hour at a time, through the night. Pulse 88, and regular; skin warm and clammy; bowels costive;

passed urine but once during twenty-four hours; no appetite. Treatment continued, and to keep room darkened and quiet.

March 30th. Slept some during the night, and is much the same as she was yesterday, with the exception that the paroxysms occur at longer intervals, and are not so violent, and that there is but little difficulty experienced in swallowing water. Drs. Ruddle and Craig, of Allisonville, and Dr. Graham, of Noblesville, saw the case with me to-day. We agreed to discontinue the morphia and calomel, as the morphia appeared to arrest the secretions; the mercury has produced slight ptyalism. The bromide to be given as before, with beef-essence as often as she will take it.

R. Ol. Ricini, ʒj. At night.

March 31st. Bowels moved three times in the night; paroxysms much the same as yesterday, averaging one every two hours and a half. At times violent, snapping at real and imaginary objects. There appears to collect in the throat a tenacious mucus, which she attempts to spit out. The approach of the spasm is marked by twitching of the affected hand; and they appear whether she be awake or asleep. Slept as much as two hours at a time, during the night; pulse 88 and regular, but weak; complains of general debility; but little appetite, and coldness of feet and hands. Dissolution threatened from exhaustion. She is able to tell the approach of the paroxysms, and places her hands under the bedclothes, that she may not bite them, and warns others not to approach her for fear she might bite them. Is aware of her dreadful condition, and converses rationally on religious subjects. Dr. Record, of Lawrence, was in attendance to-day, and we determined to continue the treatment.

April 1st. Appears much better this morning; had but two hard paroxysms since my last visit; slept four hours during the night; called for her beef-essence this morning; pulse 88, and somewhat fuller, and skin warm. Passed urine, copiously, four times during the past twelve hours. Ordered less of the bromide, as it produced irritation of the stomach. To take comp. tinct. gentian ʒj every three hours, with nutritious diet.

April 2d. Much the same; continued treatment.

April 3d. Pulse 80, and full; skin warm, and feels more natural; considerable ptyalism; some stiffness of the muscles of the neck, with soreness of the affected arm. Slept well during the night; appetite improving; and, in short, I think she is much better. Continued treatment.

April 4th. Pulse 88; tongue clean, and irritation of stomach almost subsided; appetite increased; eating poached eggs and beef-essence; did not sleep until one o'clock this morning, owing, as she described it, to "aching of the bones." There is a partial paralysis of the right arm. No spasm during the last twenty-four hours.

R. Potas. Bromid., gr. v.
Tinct. Gentian Comp., ʒij.

Every three hours, with morphia at night, providing she becomes restless.

April 7th. She has had but two slight spasms since my last report; partial paralysis of right arm has passed off; slept better last night, and states that she still feels some twitching of the muscles of the affected arm. Prof. Parvin and Dr. Elston, of Indianapolis, met me in consultation to-day. It was agreed to discontinue all treatment, except comp. tinct. gentian.

April 9th. Patient is gradually recovering, and was discharged to-day.

Remarks, by Dr. ROOKER: Knowing the fatality of hydrophobia, heretofore, makes this case one of great interest; and, no doubt, many will be skeptical as to the correctness

of the diagnosis. Hydrophobia has been prevailing as an epidemic throughout our country during the past winter, and numbers of dogs, and other animals, have died from this frightful disease in this immediate vicinity. Farther, we have every evidence that the dog that bit Miss E. was rabid. The animal had been well up to a short time before he bit her, when he was attacked with peculiar spasms, snapping at every object around him, but was killed before biting anything else.

It might be supposed by some that Miss E. was suffering from hysteria. I have been Mr. E.'s family physician for the past nine years, and never was called to prescribe for her before. She was a perfect picture of health; menstruation regular, &c., and her family are not of the hysterical kind. *She is a near relative of mine, and I think I know.*

Treatment. I have not much to say on this subject. The medicine acted like a charm in this case, and it may be possible that in bromide of potassium we have found a remedy for hydrophobia. Time will tell. I would recommend it to be used heroically in the treatment of this disease. Probably, I used larger doses than herein stated, as I had no opportunity of weighing it. I have been using this valuable medicine for the past year, in the treatment of epilepsy, and kindred diseases, and with the happiest results.

We have submitted the report of the case at length, and feel satisfied that few persons with an ordinary knowledge of hysteria, and a slight acquaintance with the symptoms of hydrophobia, will hesitate to say that Dr. Rooker has failed to exercise his discrimination in comparing the two affections. The "barking sounds" and the "snapping at everything" are the most popular symptoms of hydrophobia, which writers who have seen cases have failed to recognize as belonging to the disease. The determined observance of these popular symptoms, the presence of all other symptoms of hysteria, and the absence of all usually regarded as distinctive of hydrophobia, should have caused the physician in attendance to hesitate before giving publicity to the case as one of hydrophobia, with cure from the use of the bromide of potassium in large doses frequently repeated. (A. P. T.)

The following cases of *deaths from hydrophobia* are reported in the *British Medical Journal*, July 3d, 1867, p. 36, and August 3d, 1867, p. 97:

A deplorable case of death from hydrophobia occurred at the Liverpool Southern Hospital. A young man, 20 years of age, was bitten by a mad dog about two years since; the wound soon healed up, and nothing more was thought of it. Two or three days ago, however, unmistakable symptoms of hydrophobia were manifested, and the poor fellow died in fearful agony.

On Saturday an inquest was held respecting the death of Mary Ann Smith, aged 13 years. Deceased had been bitten in one of the fingers by a dog in the middle of May last. The finger healed up, and she continued well up till about Thursday last, when she complained of pains in her head and arms, and according to the medical evidence exhibited the usual symptoms of hydrophobia. Verdict, death from hydrophobia from the bite of a dog.

A case is reported by Dr. T. Nelson, in the *Chicago Medical Examiner*, June, pp. 322-3. Treated by application of ice-bag to spine, atropia and tobacco internally. Death on the third day from first appearance of nervous symptoms.

II. DISEASES OF THE BRAIN AND NERVOUS SYSTEM.

Aberration of the Mind caused by Emboli in the Cerebral Vessels.

In the proceedings of the B. K. Gesellschaft der Aerzte (*Wiener Med. Wochenschrift*, July 20th, 1867), Dr. JOFFE reports a case of mental aberration occurring in a laborer 46 years of age, which was evidently caused by the pressure of emboli in the cerebral vessels. In May, 1865, the patient was seized with profound melancholy, and indulged in fantastic, gloomy ideas. Examination of the chest revealed symptoms of insufficient closure of the mitral valves. There was also present at this time considerable analgesia; the patient could be pinched, or the skin penetrated to the depth of a half inch without eliciting symptoms of pain. Even when the skin was burned, the patient exhibited no signs of pain. During the course of the disease the patient continued apathetic and silent, and was wholly incapable of doing anything in the shape of work. This condition remained until March, 1866, in the middle of which the patient suddenly became better, more cheerful, began to speak with those around him, and occupied himself with a little work. The improvement was only of a short duration. A few days afterwards he became considerably excited, and directly afterwards fell into a state of total prostration. He then obstinately refused to eat. Scorbutus and diarrhoea set in, terminating in death on the 15th of April. A post-mortem showed emboli of the pia mater in its superior and anterior portion. The analgesia was explained by the presence of degeneration of the gray matter of the cord. The functional disturbance in this case differs a little from that generally found in such cases, in that there was no appearance of paralysis. This may possibly be accounted for by the fact that the emboli had their seat in the superior portion of the cerebrum, while at the base the arteries were found to be entirely unobstructed. Another noteworthy point is the temporary improvement of the patient. Twice before he had been in the institution with the same symptoms and discharged entirely well. This would indicate that the earlier attacks from emboli had been only temporary.

Hemiplegic Epilepsy.

Dr. RUSSEL, of the Birmingham General Hospital, gives, in the *British Medical Journal* for June 22d, 1867, p. 733, the notes of three cases of hemiplegic epilepsy, each presenting a different group of symptoms. Bromide of potassium produced no effect. He makes the following remarks with reference to these cases:

I apply the term epilepsy to the cases which follow in compliance with what I believe to be the better use of this term, suggested by Dr. Jackson, viz., to indicate a condition of the nervous tissue, rather than a special group of symptoms. The different attacks in the three patients presented all the suddenness of the epileptic paroxysm, and its brevity; in each instance, fits of the ordinary epileptic type also occurred; finally, the three cases, read together, will I think afford powerful support to the hypothesis that we may refer the condition of the nerve-tissue in all these attacks, to a similar occurrence, the running down of nerve power.

In this latter point of view, the three cases bear a highly interesting relation to each other, and strengthen the opinion that spasm and neuralgic pain are both attributable to the same condition of the centres with that which originates paralysis and anæsthesia. Taking the cases together, we have the three conditions, spasm, paralysis, and pain, each

one prominent in a particular case, but more or less associated with the other two symptoms. Thus in the first case, spasm takes the lead, with paralysis waiting upon it, and anæsthesia; and what is very much to our present purpose, on one occasion hyperæsthesia actually took the place of the anæsthesia. In the second case, paralysis is the main symptom, with anæsthesia and pain, the pain occupying a very subordinate position. In the third, pain is the chief phenomenon; anæsthesia and paralysis are also present, but in a less prominent place. In both of the last two cases, there was also a tendency to spasmodic action.

But not only were these different symptoms present in the same case, thereby sufficiently indicating their connection with each other; but one symptom actually passed into the other. Such was especially the case with the first patient, in whom the spasms were followed immediately by paralysis to a very marked degree.

Regarded from another point of view, these cases exemplify the remarkable selective power displayed in the epileptic paroxysm over different functions of the nervous system; the function of sensation, or that of motion, is selected separately, and treated in a different manner in the different cases, even though the same part of the body be the seat of the affection. And the same principle of selection we recognize also in the two different kinds of fits happening to every one of the patients; in one form consciousness being unaffected, in the other entirely extinguished. This circumstance has much importance in cerebral pathology, since it indicates that there are nutritive divisions in the nervous centres, distinct from one another, and thus, in the epileptic paroxysms, one division may run down, the others remaining capable of performing their appropriate functions. We may also recognize in the same facts, the total impracticability of localizing the origin of the epileptic fit in any special part of the brain.

In connection with this subject, it is worth observing the different extent of the body over which the nervous phenomena prevailed; in the third and fourth cases, the entire half of the body, the face not excepted, was the seat of the disorder; in the second case, the disorder was almost limited to a single limb.

It is, I believe, the opinion of Dr. Jackson that unilateral convulsions are suspicious of organic disease of the brain; analogy would indicate that the same is true of the other nervous derangements referred to in these remarks. The ophthalmoscopic appearances in two of the three cases are those usually associated with brain disease, and in the first case, and to a less extent in the second, the continuance of the paralysis, after the fit, points to the same conclusion.

I would just notice the partial, but considerable paralysis of the muscles of one side of the chest, observed, on one occasion, in my first case; this is, I believe, an unusual phenomenon.

Neuralgia.

Dr. ASHLEY N. DENTON, of Sutherland Springs, Texas, in a letter to the *St. Louis Medical Reporter* for June 15th, 1867, p. 264, says the following of this disease:

There is, perhaps, no disease in the whole catalogue of ills to which our poor flesh is heir, not directly fatal, that so often baffles the skill of the physician, and as a consequence renders his ministrations unsatisfactory to himself and his patient. The books, too, are unsatisfactory upon the subject. They generally tell you to "search for the cause, and, if possible, remove it." But in a majority of cases, which I have been so unfortunate as to meet with in my practice, I have utterly failed to discover any cause whatever. In a few cases I have succeeded in removing the facial variety by the extraction of a carious

tooth; and in a few others, where the pain occurred periodically, I have cured my patient with sulphate of quinine; but, as before remarked, in a majority of instances, I have had to content myself with the administration of palliatives.

Chloroform, as administered by Dr. Tanner, has proved the most useful in my hands of all other palliatives, for it is nothing more than a palliative, although the patient generally long remains free from pain after passing from under the influence of the anæsthetic. I have occasionally succeeded in relieving the intense suffering from facial neuralgia by the following local application :

R. Oleum Camph.,	.	.	.	.	3℥.
Pul. Opium,	.	.	.	.	gr. xx.
Nitrate Potassa,	.	.	.	.	gr. xv.

Mix well in a mortar, and apply to a denuded surface.

Treatment of Nervous Aphonia.

In an article in the *Cincinnati Lancet and Observer* (August, 1867, p. 449), Dr. E. B. STEVENS says:

A large number of cases are reported where aphonia seemed to continue long after the original lesion, whatever it may have been, had entirely disappeared. In these patients it would seem that the suppression of voice was rather the result of habit, just as some kinds of machinery, when once stopped, will remain so indefinitely, though every wheel and pinion and lever is in perfect order and position, until the machinery is agitated or started, when it continues to move with entire precision.

When a careful examination proves this state of things—no local lesion, and no fault of the general system—some of the simplest means of local stimulation will afford speedy relief. For example: Dr. Monks reports a case in an old number of the *Medical Times*, in which a patient had loss of voice following an ordinary "cold." He was speedily and almost immediately restored, after a suspension of voice for five months, by an inhalation of iodine vapor from a Woulfe's bottle, repeated twice a day, for fifteen minutes.

In another instance, and upon the same principle, a lady, who had been unable to speak above a whisper for more than twelve years, was successfully treated with the inhalation of the fumes of benzoin; but this patient was obliged to persevere several months.

For this form of medication fumigating cards are made as follows: A thick piece of white blotting-paper is brushed with a saturated solution of nitrate of potash until thoroughly wet. When dry, it is in like manner saturated with a solution of the compound tincture of benzoin. These sheets, when dry, are cut in narrow strips, and are ready for use—the patient burns the strips and inhales the smoky vapor as it is consumed. We cannot see any advantage in this plan over the present more agreeable and convenient mode of using atomized fluids, which may be made to convey a spray of any substance which is capable of solution.

The galvanic battery has been resorted to in some instances with a good result. The plan is to place one pole of the battery to the first cervical vertebra, and the other to the larynx or its side. This application of the Faradization was employed successfully many years ago. By means of laryngoscopy, it may now be conveniently applied, one pole of the apparatus being placed in direct contact with the inner surface of the larynx.

Traumatic Aphasia.

The following interesting notes of a case of traumatic aphasia, recorded by the patient, with remarks by Dr. J. P. BRAMWELL, of Perth, are given in the *British Medical Journal*, August 31st, 1867, p. 180:

When about twenty years of age, being incited by exaggerated descriptions of the genial climate and fertile soil in the Western States of America, I emigrated from Scotland to those parts; and, having purchased land, began, along with the other pioneers of civilization, to cut down the forest and cultivate the ground. Having brought, in the course of three years, a considerable space of land under cultivation, I was enabled to let, as a favor, to Wilson, a man with a family, who had recently come to that quarter, half of a field for the purpose of raising wheat, retaining the other half for my own use. When the wheat harvest came (about the middle of July), I hired two men (Vert and his son), to cut down my half of the field; but, when they were thus employed, Wilson and his family came and began to cut, insisting that half of the wheat of the whole field was his, and not what grew on his half of it. High words arose; but, through the intervention of Vert, it was agreed to refer the matter to the man who sowed the wheat, when he returned towards evening; and that, in the meanwhile, each party should begin to reap on opposite sides of the field. Accordingly, Vert, putting aside with his hands some very tall rye, was proceeding towards the house, I following close after; when, as it were, a flash of lightning passed before my eyes, and I became on the instant unconscious. On recovering my faculties (which I thought I did immediately, although, as I was afterwards informed, I lay senseless for the space of ten minutes), I was sitting with my hands full of blood, which continued to trickle from my head. On looking around, I saw Wilson* at some distance behind with a club in his hand, and Vert amongst the rye some paces in advance, and became immediately aware of what had happened. As I perceived that Vert was terrified, I attempted to say something for his encouragement; but to my surprise and horror, I found I could only utter unintelligible sounds. I remained sitting for some time, not from inability to rise, but from amazement, making repeated attempts to speak. At length, having taken Vert's arm, I went to my house, at about two hundred yards' distance, and sat down, hoping that in a short time I should recover the faculty of speech; but, finding I was deceived in this respect, I determined to call in the only medical practitioner in the district, who lived at the distance of about three miles. Accordingly, having intimated to Vert by signal to hand me writing materials, I took a sheet of note-paper for the purpose of writing the doctor, with whom I was intimate, that I wished his attendance. But here a new surprise awaited me; for, having dipped the pen in the ink, I found that I could not express my desire by any words whatever. I attempted to write the word "Doctor," but could proceed no further than the initial "D"; however, by showing that letter to Vert, and pointing in the direction in which the doctor lived and other pantomimic gestures, I made him understand my desire; and he accordingly sent his son for the medical man, after which I went to bed, and soon fell into what appeared to be a placid sleep, out of which I was with some difficulty aroused on the doctor's arrival. On perceiving the doctor, I immediately extended my right arm, and drew up my shirt sleeve; in reply to which signal the doctor said, "You wish to be bled, which is exactly what is required." After failing to draw blood from any vein in the right arm, he had recourse to the left, and succeeded: dark blood flowing very slowly at first, but

* Wilson was a left-handed man; and, being behind when he dealt the blow, struck me on the left side of the head, immediately above the ear.

afterwards in a full stream. To what extent he bled me, I cannot exactly say; but several who saw the quantity said that they had never seen so much drawn from any man. I may here mention that this doctor's medical education consisted only of an apprenticeship to another practitioner in one of the older States; and, although I think he erred in using his lancet too freely, having repeated the bleeding twice or thrice to a less extent afterwards, at intervals of two or three days, in other respects his treatment was judicious.

For the first six days and nights I lay on my back, almost motionless, having no pain, nor uneasiness, nor sensation of hunger or thirst; and, although I was observant of all that was said and done in my presence, I distinguished the lapse of time only by the light of day and the darkness of night. I did not sleep during all this time; but, on the morning of the seventh day, I awoke apparently from quiet sleep; and, as the fringe of the bed-quilt tickled my upper lip, I attempted to remove it with my right hand; but, to my surprise, my hand was not obedient to my will. I discovered also that the nerves of sensation were completely paralyzed from the points of the finger to the shoulder. Sensation was also gone in my right leg and foot. On discovering this, I attempted to pray mentally, but failed, not from any confusion of ideas, but from some inexplicable cause,—possibly from the want of words to convey my requests; but, what seems most mysterious and almost incredible, while I was in this state I perfectly understood what was spoken by others. For some days (I cannot exactly say how long) after this time, my mind was in a state of apathy as to what was passing; and I was with difficulty induced to take medicine or sustenance,—my bowels at the same time being torpid and the action of the kidneys being in a great measure suppressed. At length, I began gradually to recover my general health, the inability to speak or write still remaining. I rapidly recovered the use of my right arm and hand. The nerves of sensation remained long paralyzed, but recovered gradually their function from the shoulder downwards towards the fingers, in which it has never fully returned.

When I was able to get out of bed, being desirous to regain the use of my vocal organs, I sat for hours at a time anxiously attempting to repeat the first letters of the alphabet. After numerous attempts, I succeeded in uttering the sound A; which accomplished, I could repeat it any number of times without difficulty; but, on attempting to pronounce B, I repeated the sound A. At last, having succeeded with B, I had as great difficulty in returning to A. These repeated and anxious efforts at pronunciation caused my ignorant attendants to think that I had become perfectly idiotic; and they expressed themselves accordingly in my presence. I being irritable, or rather irascible from weakness, my assaults upon them when they made such remarks confirmed them in their opinion; but, as they found that I was quite acute in matters of business and could calculate, they at last concluded that I was "more rogue than fool." After a while, I was able to repeat the first five or six letters of the alphabet in succession, where my memory failed me as to the order in which the letters succeed each other. Notwithstanding all my efforts to speak, my recovery was so slow that I could converse with none but a man (Davis) who had been in my employ previously, and was my constant attendant after the accident, to whom I communicated my ideas and desires, partly by gestures and partly by my attempts at speech. So much was this the case that, at the trial of Wilson, which occurred nearly three months after my injury, he had to be sworn as my interpreter. My examination in court, on account of this, was so grotesque, and at the same time interesting to the members of the bar, that it was continued till I was quite exhausted; and it affected the audience as laughable or deplorable, according to their different bent of mind.

At this time I understood what others said, by taking the words of every clause collectively; but when I attempted to analyze it into its constituent words, I utterly failed.

For instance, Davis having replied to an interrogatory, "I don't know," rapidly, as if he had said *I don know*, after attempting for hours to separate this expression into words, I concluded them to be *I don no*; and it was somewhat remarkable that, in my attempts to speak, it was not a single word that I pronounced intelligibly, but a short sentence. Several persons were sitting in my company disputing as to the number of dollars in the English pound; at last, they asked me to settle the question by representing the number in figures; but, as the dollar is not a British coin, I could not do this, which made them conclude that I had lost all knowledge of such matters. On perceiving this, I became angry, and exclaimed, "No dollars there." This surprised all present so much, that they started to their feet, and besought me to repeat what I said; but this I could not do, although I made several efforts, and it was months afterwards before I could utter an intelligible sentence. Of course, I could not read, nor did I attempt it for a long while; but I understood what was read to me by others. Through perseverance, and the partial recovery of my faculties, in the course of a year I was able to return to Scotland alone; the strangers with whom I met on the way conceiving, some of them, that I was a foreigner who could speak the English language very imperfectly, and others that I had a natural impediment in speech.

[The subject of this narrative still speaks with hesitancy, and specially so if agitated. He is often at a loss for the right word; but generally finds it if allowed time. There is both an irregularity and a depression appreciable to touch over the seat of his old injury, about an inch above the left ear, and close to the squamous suture. The power of motion is all but restored in his right arm; but the sensation is still so defective, that he would drop his knife at dinner if not watched by the eye, and this because he does not feel it in his grasp. He was 23 years of age when injured, and is now 64 years old.]

REMARKS.—What, it may be asked, is simple aphasia? To this question there have been various answers. M. Trousseau says: "A loss of the memory of words;" but this definition, while true to a certain extent, does not account for all the strange phenomena sometimes present; for, in the case just recorded, we have the patient telling us that he could neither speak nor write "doctor," although it was in his mind. There can be little doubt that, in some cases of aphasia, the chief obstacle in the way of speech is the inability to remember the word wanted, and when this is supplied it is at once repeated, with an "Oh, yes, that is it" (as we ourselves have seen); but there are other aphasic subjects who remember more than they can say, and, stranger still, more than they can write, although there be no paralysis of the right arm. In such cases, it is probable, as M. Broca has indicated, that the inability so to do is often caused by an ataxy of the muscles. There may be no paralysis. The patient can put out his tongue straight, or move his arm well; but when he tries to speak, or write, there is a want of muscular co-ordination in these finer movements which defeats him. This hypothesis is rendered all the more probable by a curious case given by M. Trousseau, in which the aphasic subject, an artist, not only spoke like a child, but drew like a child; showing that there was impaired co-ordination in the hand as well as the tongue.

The case recorded would seem, so far as it goes, to favor the opinion that words are indispensable vehicles of thought—at least, in the case of those who are not deaf mutes; for our patient tells us, "I tried to pray mentally, but I could not put two words together, even in thought. I attempted the Lord's prayer, but gave it up as hopeless. I could have used the expression 'mercy' in thought, but beyond this I could not go." He could not pray, even in thought, because he could not remember words to pray with. It may be different, however, with untaught deaf mutes, who have never learned to clothe their thoughts in words, but, on the contrary, have always dealt with the real things, and not

with their equivalent words. We do not see what should prevent them from reasoning, without the aid of language, within, at least, certain limits. Of course the range must be very restricted, and must, of necessity, exclude all questions of an abstract character. This case presents some very exceptional and strange phenomena, which I have not previously seen noticed, viz., a total want of all chronological computation, a minute and an hour being all alike; also, no sense of hunger or drowsiness, although there had been no sleep for six nights nor food taken for days together. Are there particular portions of the brain on the integrity of which these functions depend, which received injury in the case under consideration? and are they dual or single, as the lobe of articulate language is supposed to be?

Although cases of aphasia are often associated with impaired mental powers, simply because a pure case of this disorder is rarer than a complicated one, we believe that, in simple aphasia, the reasoning powers are quite intact, and that, in cases where it is otherwise, the brain has sustained a complex lesion, which gives rise to complex cerebral phenomena; but then this is sometimes more than mere aphasia. Neither do we regard paralysis as a necessary accompaniment. We may have aphasia without paralysis, and paralysis without aphasia, or both simultaneously when the middle cerebral artery is plugged, injuring thus, at one time, the corpus striatum and middle cerebral lobe—parts performing, as we know, very different functions indeed; for the brain is not, as has been well remarked, a simple organ, but a congeries of many (Brown-Séquard). We consider that M. Trousseau has fallen into error when he says that lesion of the corpus striatum alone will produce aphasia.

It is a curious circumstance that paralysis of the right arm and leg did not come on for six days after the accident. One would have expected *a priori* that it would have been contemporaneous with the aphasia, seeing that the case was a traumatic one; but, in point of fact, we find it was not so.

It is not easy to offer a solution of this strange phenomenon. Probably, at first, the lesion was all but confined to the posterior portion of the middle cerebral lobe, but that afterwards the diseased action set up by the injury penetrated to the corpus striatum, the pons variolii, and the optic thalami. Such an hypothesis, at least, would account for the order of these phenomena as they presented themselves before us in this case—first aphasia and then paralysis.

In conclusion, the case recorded is one more in favor of M. Broca's views, which, although still *sub judice*, have much proof to render their correctness highly probable. If otherwise, how comes it about that aphasia, with paralysis on the left side, is a phenomenon scarcely ever witnessed, while aphasia, with paralysis on the right side, is a common occurrence. The exception proves the rule; and, although some cases recorded by M. Trousseau and others, render it somewhat doubtful whether Broca has exactly defined the true limits of the lobe of articulate language, none of them go so far as to show that it is in any way remote from the position which he, by a careful induction, has assigned to it.

III. BLOOD DISEASES.

Irish Purpuric Disease; affecting sporadically several Persons and a Pig, at Kingstone, near Hereford.

Dr. CHARLES LINGEN, of Hereford, gives, in the *British Medical Journal* for July 27th, 1867, p. 61, a group of cases of the Irish purpuric disease.

Rough Notes taken on the Spot, July 11th, 1867.—The pig, eight months old, had

been in possession of Mrs. Seal five weeks. It was purchased and was reared in the village (Kingstone). First observed to be ill on the 19th of May; was killed on the 30th, because considered to be dying. First observed to be "stiff," then drowsy, and so continued most of its time, never exhibiting *any* excitement. On the following day distinct purple spots appeared in abundance on the belly and inside the thighs; then on the back, and a little on the sides; lastly, on the nose and face. The animal took very little food, was never sick, and had a peculiar odor; was generally warm, though it often shivered during the first two days—less toward the end. It was killed by a butcher, when too weak to get up or to stand; and it was remarked that its blood did not coagulate. The carcass was not opened. Two other pigs, cotted with it during most of its illness, did not take the disease.

A servant girl, Mary Davis, aged 16, was first taken ill about the 21st of May. She often went to the pig, but did nothing for him. She had slight chills; was very drowsy; had headache, but not very severe; the skin was very hot (not red), no spots; much sweating for several days. She was very weak, but not so debilitated as to compel her to keep her bed wholly for the nine or ten days she remained at Mrs. Seal's. At the end of this time she went to her own home, in an open gig, a distance of six miles. She remained there ill a month. She then returned to her service, scarcely up to her work; and at this time, two months from the attack, is feeble and anæmiated.

Mrs. Seal, the landlady, who often visited the sick pig in his cot, which was close to her back door, was taken ill about the 28th of May, with great drowsiness; dry retching; she was often very faint; pain in both temples, which was neither constant nor very severe. The tongue was said to have been dry, and not furred. She had great thirst; skin always hot, whether perspiring or not; and she "felt very hot inside." Eventually she had much sweating by day, and especially at night. The bowels were always regular; urine not remarkable. She had a very large purple spot on the loins, one not so large on the outer part of the thigh, and many others, smaller, in various parts. The nails and finger-ends were often purple, but not cold. Perhaps the most prominent symptoms in this case, as in the late C. Powell's, was great pain in the right upper arm to the elbow, scarcely implicating the joint itself. This was severe at first, and kept on nearly a month, the arm being of a deep red color most of the time.

The cowman, Charles Powell, æt. 46, buried the pig, and was taken ill the next morning, and died in three days.

Exclusive of the old woman in whose house the fatal case died, and the pig, there were three patients affected more or less by the disease; of these I saw one only. The three were the man, Charles Powell, who visited the pig daily and buried him; the young servant, Mary Davis, who had an illness of six weeks, and recovered; and the landlady, whose illness is scarcely over yet.

Cerebro-Spinal Meningitis.

Dr. CARRET, in *La France Médicale* (Oct. 16th, 1867), observes that:

The spinal and grave cerebro-spinal forms are more frequent during typhoid epidemics than in sporadic cases; their study is very important, as regards diagnosis. Typhoid fever does not enjoy a monopoly of symptoms to the exclusion of other maladies; so these symptoms cannot serve in the matter as a differential diagnostic. It is to be deplored, however, that these deceitful forms should have misled physicians, even those experienced, who have more than once confounded typhoid fever with rachidian or cerebro-spinal meningitis. Moreover, these spinal symptoms, sometimes from the very beginning, simu-

late thoracic phlegmasias and even neuralgic rheumatismal affections. Apropos of this, we think it worth while to cite the following case: A boy aged 15 years, was received into the service of M. Tardieu, having been carried to the consultation on the arms of his parents. He could not walk, and it was thought he was paralyzed in the lower extremities, or had articular rheumatism. When he was examined, he complained solely of violent pains in the knees, and of such a weakness in his lower extremities, that he could not support himself. Those parts, as was the inferior half of the abdomen, the seat of a cutaneous and excessive muscular hyperæsthesia, and pressure, made over the last cervical spinal processes, occasioned intolerable pain. The boy was in the fourth day of a pneumonia, of which ten days afterwards he was cured. It is enough to know that these facts exist, and the question of differential diagnosis arising, a severe and scrupulous examination of every symptom should follow. We believe with Fritz, that the error would be avoided, if mature reflection was exercised, in regard to lack of harmony in derangement of the different functions of the spinal cord; to the unfixedness of these symptoms, their irregular succession, the expression of the face, the nature of the delirium, to the epistaxia, to gastric troubles, to iliac pains, finally to the diarrhoea, to the sibilant râles, and to the appearance of lenticular rose-colored taches.

Case of Fever, with Cerebro-Spinal Arachnitis.

JOHN W. TROTTER, Esq., Assistant Surgeon, Coldstream Guards, reports, in the *British Medical Journal* for July 27th, 1867, p. 61, a case of fever, with cerebro-spinal arachnitis, occurring in a soldier æt. 24. He was admitted into hospital on May 17th, 1867. He had frontal headache, hot skin, and furred tongue. On the 20th, he became very anxious about his illness; there was great prostration; his face was flushed; he had a tendency to delirium, and complained of much pain in his legs, which, he said, felt tense and swollen. This was not so. On the 22d, there was an increase of delirium; he started in his sleep. On the 25th, he had slight internal strabismus and ptosis of the left eye; bowels costive; no albumen in his urine. He appeared to improve from this up to June 8th, when he passed his evacuations in bed, and was rather purged. The latter symptom passed off and did not return. He subsequently required the daily employment of the catheter. He became stupid and lethargic; was roused with difficulty; and was constantly "patting" his head or chest with his right hand. On June 20th, his head was drawn back, and he appeared impatient of its being moved.

Pulse rarely above 100. The morning temperature was above 100°. There were no petechiæ of any kind. He died, extremely emaciated, July 2d, on the forty-sixth day of the disease.

Autopsy (twenty-four hours after death). There was great vascularity of the integuments and pericranium over the top of the head. The calvaria separated from the dura mater with unusual difficulty, the membrane being very vascular; the knife was required to separate the dura mater and its arachnoid lining from the vertex of the brain in the neighborhood of the Pacchionian bodies. The infundibulum was divided in removing the brain, and from three to four ounces of semi-translucent fluid escaped. On section, the puncta vasculosa were unusually marked; the brain-substance was firm. In the lateral ventricles, the serous membrane covering the corpus striatum in each was rendered semi-opaque and thickened, by a semi-transparent yellowish deposit, like semi-organized lymph; this left the internal or serous surface smooth and bright, but the cavity still contained some semi-transparent serous fluid. At the base of the brain, the arachnoid covering the medulla oblongata and the lateral lobes of the cerebellum was white and opaque. In the

chest the contents were normal, except lobular pneumonia of the lower lobe of the left lung, with slight pleuritis of recent origin.

Typhoid Fever.

Dr. E. MONTGOMERY, in a paper read before the St. Louis Medical Society, says (*St. Louis Medical Reporter*, July 1st, 1867, p. 257): Although I believe typhoid fever is contagious to a slight extent, yet it is not half so much so as typhus. It is probable that typhoid fever is first excited by some atmospheric poison entering the circulation by the respiratory passages, and, as soon as a case or two occurs, the pyrogenic poison is rapidly augmented by coming in contact with animal and vegetable effluvia, as cesspools, open drains, ditches, sewers, &c. I think that this is the most plausible supposition to account for the typhoid epidemics which so frequently prevail. Dr. Murchison, of London, seems to think that foul sewers, cesspools, &c., will of themselves excite the disease; but if so, how is it that so many cases arise in healthy, airy, and salubrious districts? At this time, in this city, we find isolated cases in the most healthy situations, in large, well-ventilated houses, and in subjects who have not been exposed to very noxious emanations. Again, if the effluvia arising from filthy sewers is capable alone of exciting the disease, why is it that it so often prevails in cold, frosty weather? The slow and gradual accession of the disease, accompanied with well-marked premonitory symptoms, would lead us to judge the existing cause was some subtle toxic agent which enters the circulation, contaminates the blood, and gradually blunts and perverts nervous action and energy, and prostrates the physical powers, giving rise to all the phenomena called fever. The pathological changes are but the consequences of the fever.

In typhoid fever we have—

First. Septicæmia, or blood contamination.

Second. Quickened circulation and fever heat; and,

Third. General asthenia. The indications of cure are very obvious, therefore.

To fulfil the first indication, the internal administration of bisulphite of soda, combined with diuretics, as digitalis, the fluid extract of cubebs, or uva ursi, spirits of nitre, &c., will be found most advantageous. I give the bisulphite in from ten to twenty grains every two or three hours. Besides correcting the septicæmia, neutralizing or destroying the blood-poison, it is a powerful refrigerant and febrifuge, preventing the too rapid oxidation and organic destructive change in the system. The diuretics, I conceive, assist in eliminating the noxious materials, whether the *exciters* or *products* of the malady. In the first stages one or two small doses of some cholagogue cathartic may also be judiciously employed. I generally use a combination of blue mass, ipecac., and rhubarb; or hydrarg. cum magnesia; or the mild chloride, ipecac., and assafœtida. If there is much diarrhœa, the hydrarg. cum creta and assafœtida will be most appropriate; and I would here say that unless the diarrhœa is very profuse, we should not check it abruptly; if the last named remedy fail, a few doses of the spiritus terebinthinæ, or some of the mineral acids, will generally succeed in controlling the profluvia.

To fulfil the second indication in treatment, I think there is nothing so prompt and efficient as the "wet sheet;" but, like all powerful remedies, it requires care and judgment in its application. It should only be used in the early period of the disease, and in cases where the fever is ardent, and the patient not very weak and nervous; in these last cases, where there would be risk in using the wet sheet, frequent sponging with cold or tepid water will answer a good purpose.

To subdue the fever heat, calm and equalize the circulation, I also use the bisulphite

of soda, combining it with digitalis. It is astonishing to witness the happy and tranquilizing influence of this combination; it has all of the good and none of the bad effects of Dr. Graves's opium and tartar emetic prescription. It allays the febrile excitement, soothes the mental hallucinations, and disposes to a calm and refreshing sleep. Free ventilation, strict cleanliness, changing the underclothes and bedclothes every day, and free and frequent sponging the whole superficies of the patient will very materially assist in controlling the fever and counteracting its effects.

It will rarely be necessary to continue the use of the bisulphite and digitalis more than six or seven days; after that time very little medicine will be required,—a few drops of the spiritus terebinthinæ with infusion of carrageen or lichen Islandicus, if there is much gurgling or tympanites, will be found useful. Eight to twelve drops of the nitro-hydrochloric or dilute medicinal phosphoric acid in the above-mentioned infusions every two, three, or four hours, will in many cases greatly tend to fulfil the third indication,—prevent asthenia. In the advanced stage, if there is much prostration, five drops of nitre and ten drops of hydrochloric acid, in an ounce of the infusion of columba root every three hours, is a most excellent tonic, and in my opinion tends to prevent structural lesion in the intestinal mucous follicles. The subnitrate of bismuth is also well adapted to accomplish the same purpose; it may be given in ten-grain doses in a cup of infusion of carrageen, every three or four hours. The Iceland and the Irish moss make very excellent dietetic drinks in this disease, and are also very good vehicles in which to administer other remedies. The death tendency in this disease being asthenia, it is all-important to sustain and revive the sinking powers of both body and mind; and with this view some good brandy and wine may be advantageously given along with the restoratives and tonics already mentioned. Of course, a light but nutritious diet, given often, in small quantities, will also be necessary.

The above is a general outline of the remedial means used; but I wish it to be distinctly understood that I do not advocate precisely the same course of treatment in every epidemic of typhoid fever, or even in every case of the same epidemic. One case may require the bisulphite and digitalis, and the cold sponging or wet sheet to be vigorously applied, whilst another will require them but a short time, and will require sustaining remedies throughout. In former years I often believed I cut short the disease by quinine and opium in large doses, whilst in this epidemic I imagined this abortive method would not succeed. I have tried it in a few cases, but was constrained to return to the means above set forth.

The New Treatment of Rheumatism.

Dr. CHARLES E. BUCKINGHAM, of Boston, states (*Boston Med. and Surg. Journal*), that the formula of Trousseau calls for *caustic* lime, and not slaked lime, as stated in Parrish's work. The formula would then be: two (2) ounces of caustic lime mixed with eight (8) ounces of sugar in a mortar. Pour over this mixture a pint (wine measure) of boiling water, and afterwards add enough more boiling water to make up the pint. After it has been filtered, the preparation is ready for use. The operation is hastened by the use of the boiling water and the formation of lumps is avoided. Forty-five drops every two hours has been given by Dr. Buckingham in cases of acute rheumatism, but usually thirty-five drops in half a tumbler of sweet milk every three hours is enough.

Milk-Sickness.

Dr. L. P. NEWMAN, of Chicago, Ill. (*Chicago Medical Journal*, June, 1867), says :

An article on this subject, in a recent number of the *Journal*, recalls to my mind a series of observations made by myself, in the year 1865, upon an epidemic called "milk-sickness," then prevailing in the "Western Reserve," in Ohio.

The surface of the infected district is undulating and woody, interspersed with low prairie or marsh lands, covered with water, grass, and low brush. The prevailing diseases are of the periodical type.

I first noticed the disease in milch cows; the characteristic symptoms being an appearance of great agony, with weakness of the knees and trembling of the whole frame; the bowels constipated, the fæces hardened; the urinary secretion entirely suspended. A speedy death the result. In examining the animal after death, the skin was found very much thickened, and covered with small pustules. The subcutaneous tissue was filled with serum, giving the bloated, anasarcoous condition. The large viscera generally congested with very dark blood.

I have examined the bodies, not only of numerous kine, but of the horse, hog, sheep, and dog, also of fowls, both domestic and wild—especially the buzzard. In all my examinations, I found the same condition present. Whence animals receive this affection, I am unable to determine, but men procure it from eating the meat, and drinking the milk of the infected. I have never seen a case from the first-mentioned cause, but hundreds from the latter. The symptoms were precisely the same as those noticed in animals, with the exception, that in man there was extreme nausea and vomiting. The skin was dry and hot; the tongue heavily coated upon a red body; the pulse very rapid; respiration difficult, causing much pain around the umbilicus; the abdomen inflated and tender.

It is generally fatal if neglected, but if called early, before the impression of the poison upon the system became profound, I could succeed in arresting the vomiting, and loosen the bowels, my patient was safe. If relief was not near, the king of terrors claimed his victim. One case I will state :

May 18th. Was called to see Mr. B., who had that morning, whilst in perfect health, drank some sweet milk from a *fresh* cow. One hour afterward he was attacked with the symptoms just described. Ordered half an ounce syrup. zingiberis, which checked the vomiting. Then directed pil. cathart. comp., three, to be repeated every four hours. The following prescription was then written by my counsel, Dr. Johnston: R. Hydrarg. chlorid. mit., quiniæ sulph., ʒʒ gr. xxx. M. In chart. vj. divid. S. One every hour. The result was happy; our patient recovered. We pursued this course of treatment with great success.

In one *post-mortem* of a human subject which I made, I found the same general morbid features noticed in similar examination of animals. The heart, lungs, and brain highly congested with dark, grumous blood.

So far as I am advised, "milk-sickness" is most prevalent in highly malarious districts. Are not the cattle feeding in and inhabiting these localities affected by a strictly malarious fever, which, transmitted by this channel to the human being, assumes a malignant type of the same disease? Such is the impression I have myself received from observing it, and, if erroneous, I hope to be excused by a profession ever willing to recognize an honest purpose.

Hemorrhagic Diathesis.

Dr. GARROD, of King's College Hospital, gives in the *British Medical Journal*, July 6th, 1867, p. 7, a statement of a case of hemorrhagic diathesis in a child, treated with partial success by sulphate of iron and sulphuric acid.

IV. LOCAL DISEASES.
(a) DISEASES OF THE RESPIRATORY ORGANS.***The Diagnosis and Treatment of Diseases of the Chest.***

IN the President's address at the annual meeting of the Northern Branch, Dr. EDWARD CHARLTON, physician to the Newcastle-upon-Tyne Infirmary, etc. (*British Medical Journal*, August 24th, 1867, p. 146) says, in reviewing the changes which have occurred in the last thirty years in the study of diseases of the chest :

At the time when we commenced the study of medicine, it was thought that Laennec and his fellow laborers had exhausted the subject to which we allude. The stethoscope, it was said, had cleared up all that was obscure, our diagnosis with that instrument had been rendered almost infallible, and no longer could it be said as of old by Baglivi, "O! quantum difficile est curare morbos pulmonum. O! quanto difficilior eas cognoscere." Has Laennec's great discovery then effected all? Has it fulfilled all the anticipations entertained by its ardent advocates? We answer decidedly, it has not, though its indications are still to all of us of inestimable value. We can indeed distinguish by its aid and by percussion, chronic bronchitis from tubercular disease; we can follow the gradual development of the latter to its final result; we can compare the external improvement produced by remedies with that which really takes place in the lungs; we can detect the earliest signs of pericardial or endocardial affection during the progress of acute rheumatism; we can follow the accumulation or diminution of fluids in the thoracic cavity; we can diagnose an early stage of aneurism and an early stage of phthisis: but the stethoscope and percussion have not rendered us perfect either in the pathology or in the treatment of chest-disease. We may even accuse this wonderful discovery of having in some respects retarded the march of science; for the enthusiasts in its use turned their attention too exclusively to the physical signs of disease, and devoted less time than they should have done to the origin and treatment of maladies. But gradually the enthusiasm for the stethoscope died away, and auscultation assumed its true position as an adjunct to diagnosis, but not as the sole reliable means of discovering chest-disease.

Meanwhile, pathology as well as therapeutics had been undergoing a remarkable change. The old post-mortem inspections by the naked eye, first begun by Morgagni and so fully carried out by the French school of Broussais and Andral, and by the great pathological school of Vienna, has now to give way to an improved method of examination, to the searching investigations into diseased tissue by the microscope. Histology now became the favorite pursuit; its advocates looked with scorn on the old naked eye pathologists; healthy and morbid tissues were diligently studied; wonderful theories were elaborated, reigned for a time, and disappeared, till some were heard to say that the minute analysis of tissues bid fair to increase the darkness that prevailed. But in the meantime some master minds were at work, unswayed by preconceived theories and bent only on

investigating the truth. The doctrine of cell-development, so well elaborated by the great German pathologist of Berlin, Professor Virchow, was gradually brought to bear upon the mode of production of disease, and particularly was it found useful in elucidating that difficult problem in pathology, the formation of tubercle. The old French school of the commencement of the present century, the school of the solidists, always in opposition to the old humoral pathology, had ever regarded tubercle as a foreign body developed within the system by some mysterious agency. By many, tubercle was regarded as a mere local disease, and even at the present day we hear constantly the expression "abscess of the lung," as though the malady had not a constitutional origin. Virchow, however, has proved to us that true tubercle is a disease *sui generis*, produced within the lungs by constitutional causes, and formed from elements already existing there.

"It consists," says the Berlin pathologist, "of miliary masses of more or less transparent cells containing one or many nuclei, so far resembling pus-cells as being developed like them from epithelium or connective-tissue cells, but differing from pus-cells in that they do not as a rule break up into a pathological cream, capable of being absorbed; but after being massed together in the form of miliary semitransparent tubercles, they break up by a retrograde metamorphosis, beginning in the centre, into a fatty granular detritus, becoming more fully softened by inflammatory exudation from the surrounding tissues."

Much as the medical world is indebted to Virchow for having pointed out the nature of true tubercle, it is perhaps still more important that he has shown the existence of a spurious tubercle, a true pus, which from some deficient vitality never breaks down into the ordinary cream, but may harden and contract into a low organic form, and remain as a permanent cheesy or cretaceous deposit. These deposits act as foreign bodies; they excite inflammatory action in surrounding parts, just like true tubercle; as gray, or particularly as cretaceous particles, they may be expectorated, but they are not the results of true phthisis. They may occur from local irritation, they may be caused by irritating particles inhaled into the lungs, as the siliceous dust from dressing freestone; but the tubercular diathesis, the true constitutional disease, is not then present. It is in such cases that there are probably formed the cretaceous masses so frequent at the summit of the lungs, with the condensed pulmonary tissue, and the puckered up pleuritic covering, which has of late years been so triumphantly pointed to as evidence of the complete cure of consumption. There are few amongst us will not have met with these deceptive cases, especially among stonemasons, and dry grinders of metal. We never received a stonemason into hospital with the general symptoms of phthisis, but we felt a hesitation and a doubt as to the true character of his case. When the expectoration contained cretaceous particles we always felt more hope than in ordinary phthisis, for we had seen so many of these cases do well. Some indeed ended fatally under our care; and in post-mortem examinations we found that death had ensued from pneumonia, and not from true tubercular disease. This was pointed out to the profession twenty years ago, by Dr. Calvert Holland, but it was reserved for Virchow to explain the presence of these cretaceous masses, and to distinguish between true and false tubercle. Virchow has shown, too, that ordinary sarcoma, and even cancer, which we might regard as the very opposite of tubercle, may so degenerate as to be undistinguishable by mere inspection from the latter. The gray tubercle is then the true tubercle of phthisis; the yellow opaque tubercles are in many cases the result of ordinary inflammation and exudation. We will not, however, deny that inflammation may exist in, and may even be concerned in the production of true tubercle in a secondary sense; but under the influence of the tubercular diathesis this inflammation does not produce its ordinary results, a retrograde metamorphosis ensues, and the true tubercle may either dry up and wither into cartilaginous corpuscles incapable

of further change, producing thereby a temporary cure, or it may go through the usual process of softening. This softening is of course rarely accomplished without the destruction of a considerable portion of the neighboring pulmonary parenchyma, and thus, by the simultaneous or successive softening of masses of tubercle, certain portions of pulmonary tissue are isolated, loosened, and at length expectorated *en masse* from the lungs. Such portions are generally very small, and enveloped as they are in mucus they may escape detection. Recently it has been proposed by Dr. Fenwick, formerly of North Shields, to collect these fragments by boiling the mucus and pus of the expectoration in liquor potassæ, which liquefies the mucus and allows the heavier particles of lung-tissue to fall to the bottom of a conical glass, where they can easily be detected by the microscope. Now such evidence as this is really most valuable, for in the spurious form of phthisis no such destruction of lung-tissue takes place. Virchow has then taught us the existence of a true and of a false phthisis, he has proved that tubercle originates from abortive cell development, but he has not yet informed us whence originates the failure in the development of the normal cell. Is it in the brain from deficient nervous influence? is it in the stomach from imperfect digestion and assimilation? is the liver at fault? or, lastly, are we to seek the cause in deficient action or secretion of the pancreas? The latter is Dr. Dobell's theory, but we dare not yet pronounce it to be the true one. Here is a wide field laid open for investigation, a field in which there are already many ardent workers, but the further we advance in this direction the more arduous do our researches become.

It cannot perhaps be said that since the era of Laennec we have made great advances in the diagnosis of phthisis by auscultation and percussion. We have, however, greatly simplified the complicated nomenclature of sounds heard in the chest; we recognize the existence of moist and of dry sounds, but we no longer perplex the student with the minute difference between supercrepitant and subcrepitant *râles*, or between bronchial air-sounds or voice-sounds and pectoriloquy. We acknowledge in them a simultaneous cause differing only in degree. Another means of diagnosis has recently been added to our list, viz., the rise in the temperature of the body in phthisical disease as ascertained by the delicate clinical thermometers now in use. In fever, thermometric observations on the skin have been already found to be of great value, especially as regards the prognosis; but will the thermometer enable us to distinguish between true and spurious phthisis? We think not; for in both there is inflammatory action, which may and will elevate the temperature of the skin. After all, our predecessors, who knew nothing of auscultation or percussion, who were obliged to form their diagnosis upon the general history of the case, and the outward signs they could observe, were not wasting their time, and at the present day we reap the benefit of their observations; we readily acknowledge that without an accurate knowledge of the early details, without a carefully considered history of the symptoms, we may, in spite of our boasted skill with the stethoscope, fall into grievous mistakes.

While, then, we concede that spurious phthisis may be, and often is, perfectly cured, can the same be said of true tubercular disease? If Virchow's doctrine be correct, that the true gray semitransparent tubercle may and occasionally does, at an early period of its existence, dry up, obsolesce, and cease to be dangerous, can we cure the diathesis, the faulty assimilation, the defective nervous influence, the failure or alteration of the pancreatic juice, which may be the cause of the production of tubercle? Can we decide on the existence of the tubercular diathesis before the perilous matter is formed in the lungs? With certainty we cannot, but we do, with most of the best pathologists of the present day, acknowledge the identity of the scrofulous and tubercular diathesis, and the

former exhibits its presence by outward signs often appreciable at a very early period of life. The old physicians were right; the existence of scrofula in a family or in an individual should make us prepare against the invasion of tubercle, and adopt, as far as lies in our power, those hygienic measures which may ward off the disease. Have we, then, with our increased acquaintance with the nature of tubercle, advanced *pari passu* in the treatment of this dreaded disease? Is the mortality from phthisis lessened, or does it not still form one of the most important items in the bills of mortality? Do not the hurry and haste in which we now exist, the wild passion for money-making, the wilder and still more frivolous pursuits of fashion or pleasure, compensate for our better knowledge of tubercular disease? To a certain extent this may be the case; but from the time when Sir James Clark, thirty years ago, published his admirable essay on climate in the treatment of phthisis, a better prospect has been opened to us, and some here may live to see the day when the hygienic and the prophylactic treatment of phthisis will not be left merely to the isolated opinion of the medical attendant, but, like the great popular questions of vaccination, of cholera, and other epidemic diseases, will become a subject of careful legislative enactment. Still it cannot be said that the medical profession has been backward in the attempt to stay by treatment the ravages of phthisis. Every new remedy (and their name is legion) has been carefully tested; and meanwhile great and marvellous has been the change that within the last thirty years has occurred under our own eyes in the therapeutics of this malady. The old shutting up in a room and lowering treatment are exploded; tonics and open air exercise, whenever the latter can be borne, have taken the place of these. Iron and quinine have replaced the lancet and sedatives; it has been found that the cough is moderated while the appetite is improved by these tonics; and assimilation is far more vigorously carried on than when the digestive powers were weakened by the constant repetition of opiates. Great attention is now paid to the functions of the skin; we have become altogether a bathing and washing people to an extent that our forefathers never dreamed of. That cod-liver oil has had its day and will soon be numbered among the things of the past, we are by no means willing to allow. We regard this remedy as really valuable, as an easily assimilated fat, helping to support the system while we strive by other tonics to alter the tubercular diathesis. It may be that the appearances of returning health that it produces are often fallacious, but we have ourselves, we are sure, seen many cases where its use has long protracted the disease. Of late years the statistics of phthisis have shown us that the malady is of much longer average duration than was laid down by Louis thirty years ago. We have, indeed, improved since then in the power of detecting the early stage of the malady; but, even allowing for this, we are disposed to believe that the greater average duration of phthisis at the present day is due partly to the tonic and more rational invigorating treatment employed, and partly to the free use of cod-liver oil.

Pneumonia.

Dr. A. T. H. WATERS, F.R.C.P., Physician to the Liverpool Northern Hospital, in a clinical lecture (*British Medical Journal*, October 12th, 1867, p. 809), on the subject of pneumonia, remarks that no single line of practice will ever be found applicable to all cases of this disease. The patient himself, and not simply the diseased lung, should be treated. He has never resorted to venesection, and only occasionally to cupping or leeching. Of the value of tartar emetic, in some cases, he has no doubt. It is rarely if ever necessary to give it in large doses, and its prolonged administration is almost always injurious. No fixed or definite rule can be laid down as to the administration of alcohol.

In a large proportion of cases, both in hospital and private practice, he has given some form of alcohol, in the earlier stages of the disease, with decided advantage. As a purgative, where such is required, mercury is very useful, as it tends to relieve the portal circulation, often overloaded in pneumonic inflammation; but if given in frequent doses, or with the view of producing salivation, its effects, except in a few exceptional cases, will be more or less prejudicial. The exhibition of opium is often very desirable. It relieves the pain, allays the distressing cough, and procures sleep. Ipecacuanha, as an expectorant and diaphoretic, may be occasionally of some service. Carbonate of ammonia and chloric ether, when given together, have often a beneficial effect. When he thinks a case will not be improved by small doses of antimony, he generally prescribes ammonia and chloric ether, either with or without alcoholic stimulants. It by no means follows that the existence of a hot burning skin in pneumonia necessarily indicates the use of salines, or antimony, or any other of the so-called diaphoretic medicines. This condition is sometimes rapidly relieved by some form of alcohol, which is occasionally the best diaphoretic which can be employed. At the commencement of the attack and in its early stages turpentine fomentations or mustard poultices, followed by linseed-meal poultices, seem to act beneficially; but, later in the disease, when consolidation has taken place, blisters are of more value, they cause contraction of the capillaries by reflex action of the vaso-motor nerves, and appear to be useful in producing absorption of effused matters. Large linseed poultices may be applied to the chest, but they are not as valuable in this disease as in bronchitis, in which they often afford great relief.

Case in which a Penny Coin, Impacted in the Throat of a Child, was Discovered and Removed by the Aid of the Laryngoscope.

Dr. GEORGE JOHNSON, F.R.C.P., Physician to King's College Hospital, Professor of Medicine in King's College, London, relates (*British Medical Journal*, July 6th, 1867, p. 4) the following particulars of the removal of a foreign body from the throat by the aid of the laryngoscope:

F. C. W., a fine healthy boy, aged a year and eight months, was brought to me on the 2d May by his parents, who told me that, two days before, he had swallowed a copper penny. When the child was taken to his mother by a servant immediately after the accident, he was black in the face, his eyeballs apparently starting out, and he seemed to be in imminent danger of suffocation. These alarming symptoms soon subsided, and, when the medical attendant arrived, he supposed that the coin had passed into the stomach.

The child's father, feeling alarmed and anxious, took him to one of the hospitals east of Temple Bar, where the house-surgeon, after learning the history, said there was nothing to be done; but he desired that the patient might be taken to him again on the following day.

When the child was brought to me, about fifty-two hours after the accident, I ascertained that, since the coin had disappeared, he had been quite unable to swallow solids, while the swallowing of liquids was attended with difficulty, and often excited coughing. Some water, that I gave him to drink, made him cough. There appeared to be much irritation about the throat, and there was a frequent discharge of salivary mucus from the mouth. This discharge was occasionally tinged with blood. Respiration was attended with a moist rattling noise in the throat. There were frequent fits of coughing, which almost entirely prevented sleep; the child looked weary and anxious, and the distressing symptoms had gone on steadily increasing. With such a history, it could scarcely be

doubted that the coin was impacted in the throat. Up to that time, the only treatment had been the administration of a dose of castor-oil.

Using a piece of soft wood to keep the mouth open, I endeavored to reach the coin with my finger; but failed to do so. Then, while keeping the mouth open by the wooden gag between the teeth, I introduced a small laryngeal mirror. At first, I found that the surface of the mirror became instantly smeared over and dimmed by the profuse mucous secretion from the throat, so that I could see nothing. I next swept the mucus out of the throat by a brush on a bent whalebone; then quickly introducing the mirror, I saw the coin sticking in the upper part of the œsophagus, the surfaces front and back, and the upper margin just below the opening of the larynx.

I then took a pair of long, slender, curved forceps, opening front and back, which I had purchased from Messrs. Weiss a short time before, and guiding the forceps by the throat-mirror, which I held in my left hand, I seized the edge of the penny and brought it out.

Immediately after the removal of the coin the child retched and coughed violently for a few seconds. I then gave him some milk and water; and it was pleasant to see the eagerness and the ease with which he drank it. From that time all symptoms of irritation rapidly subsided; but it was not until the third day after the removal of the penny that he could be induced to swallow solids. When I saw him again, a week after his first visit to me, he had lost all his discomforts, and he looked a model of health and happiness. It is probable that the alarming symptoms of suffocation, which occurred immediately after the coin got into the throat, resulted from the partial closure of the larynx while the foreign body was sliding over the epiglottis on its way to the gullet. That the continued impaction of the coin in the gullet would have been speedily fatal by the extension of inflammation and swelling to the larynx, scarcely admits of a doubt.

It is commonly supposed that the larynx of a young child cannot be successfully examined by the mirror. Without doubt, a laryngoscopic examination is more difficult in the case of children than in adults; but I find that, with care and tact, it is possible to explore the throat of even very young children. I have recently, on two occasions, examined, without difficulty, and with complete success, the larynx of an infant five months old.

(b) DISEASES OF THE CIRCULATORY SYSTEM.

Notes and Observations upon a Case of Unusually Rapid Action of the Heart (232 per minute).

RICHARD PAYNE COTTON, M.D., F.R.C.P., London, Physician to the Hospital for Consumption, &c., Brompton, gives (*British Medical Journal*, June 1, 1867, p. 629) the details of a case of unusually rapid action of the heart, as follows: Tailor, æt. 42, had shortness of breathing, with general distress, for several days, first attack. The pulse was too rapid to be counted; respirations forty; *pulsations of the heart two hundred and thirty in a minute*. In three weeks the patient entirely recovered, the action of the heart becoming *suddenly* natural, and the pulse eighty in the minute. Another attack occurred fourteen months after, less severe, and of short duration. Six months subsequently there was a return of the symptoms, and within the last winter two slight attacks. The last attack commenced about the first of May, being preceded as before by loss of appetite, acidity and disordered stomach, and with constipation, the rapid action of the heart following immediately upon a sensation of faintness and short breathing.

When called to see the patient, I found him anxious, but not otherwise seriously dis-

tressed; his breathing was short, hurried, and irregular, varying from thirty to forty in a minute. The pulse was too rapid to be depended on; but the beating of the heart was distinct, regular, free from murmur, and *two hundred and thirty-two* per minute. Immediately over the semilunar valves both sounds could be clearly distinguished, scarcely differing from each other, and closely resembling the peculiar "tic-tac" beats of the foetal heart; but in every other part of the cardiac region a single and abrupt sound only could be heard. No valvular murmur could anywhere be detected, neither was there any visible pulsation in any of the larger arteries; but the jugular veins, as well as the larger veins at the bend of the arms, could be distinctly seen to pulsate.

Under the action of aperients a considerable quantity of tapeworm was expelled. Tr. of digitalis, ten to fifteen minims *ter die*, was given. The heart returned again *suddenly* to its natural pulsation; pulse rather below seventy in a minute. Two or three days before this hæmoptysis occurred, accompanied with dulness at the base of both lungs, and with feeble respiratory murmur.

FIG. 1.



FIG. 2.



Fig. 1 gives the tracing by the sphygmograph of the radial pulse during the attack. Fig. 2, the tracing after recovery.

The patient could at no time be said to be in danger; he suffered little, either bodily or mentally.

The interesting question remains—Upon what did the heart's rapid action depend?

It appears to me that such extreme rapid action of the heart, when free from organic or inflammatory disease, and when unconnected with displacement, must arise from one of two causes. Either the heart itself is so extremely sensitive that it contracts upon the healthy blood before its cavities have had sufficient time to become properly filled with this fluid; or, the blood itself is of so abnormal and irritating a character as to excite such premature contraction. The first condition may be occasionally seen in certain diseases of the nerve-centres, but more frequently in simple nervous and hysterical palpitation; the second, in palpitation arising in the course of an attack of gout, or acid dyspepsia.

In the case before us, either of these two conditions may have existed. The presence of the tapeworm may have produced a reflex irritation of the heart itself; or, the acidity and dyspepsia under which the patient invariably suffered at the period of his attacks may, by giving rise to an abnormal condition of the blood, have provoked the heart to its rapid and premature contraction; and it is even possible that these two conditions may have coexisted. I will not, however, insist upon such an explanation; but, in the absence of even the slightest indication of brain or spinal affection, or indeed, of any unusual amount of general nervous sensibility in our patient, I am at a loss for any other.

One of the still remaining symptoms to which I have referred, viz., the pulsation of the right jugular vein, noticed both by Dr. Sanderson and myself, is not easy of explana-

tion. It is a natural conclusion, from such a condition, that the tricuspid valve must allow of regurgitation. During the previous extreme rapidity of the heart, insufficiency of this valve, and the consequent venous pulsation is easy to understand; but after the heart had returned to its healthy state, why the valve should still remain incompetent, or, remaining incompetent, should not have given rise to a regurgitant murmur, is not so easy of comprehension. If regurgitation really existed, as the venous pulsation would indicate, the case is still further interesting, as an addition to the evidence which most of us must have had, that valvular regurgitation is not necessarily productive of valvular murmur.

Another case is reported as follows in the *British Medical Journal* for June 15th, 1867, p. 72:

SIR: The interesting case recorded by Dr. Cotton in your impression of to-day's date, reminds me of one very similar which occurred in my own practice some ten years ago, and of which I never heard the parallel until now.

In the case which came under my care the patient was a man of 30 to 40 years of age, rather slender, and of middle height and fair complexion. When I saw him the action of the heart was so rapid that I could not make out the precise number of beats; but I roughly estimated that its velocity was tripled; yet the action, beyond being noisy and rather violent, was unattended by any appreciable valvular murmur, friction-sound, or irregularity of rhythm. His countenance was pale and anxious, and he had difficulty in sleeping; but, beyond these facts, I could discover nothing having any relation to his singular condition. I believe that he had suffered a similar attack once before in his life, but had otherwise had fair health. He recovered completely after about ten days' illness, and I lost sight of him.

I am unable to suggest any cause for this singular derangement of the heart's action; was quite at sea at the time in regard to treatment, and relied chiefly on keeping him quiet, feeding him carefully, and, after a few experimental medications, letting him alone.

I think, after reading the report of Dr. Cotton's case, I should adopt the same line of treatment, if called upon again to prescribe for another patient in the same predicament. Probably the disease arises in the nervous system.

I am, &c.,

JAMES EDMUNDS, M.D.

FITZROY SQUARE, W., June 1st, 1867.

In the *British Medical Journal* for June 22d, 1867, p. 752, Sir THOMAS WATSON, Bart., Cavendish Square, W., reports a third case of this rare disease, as follows:

My patient was a man of middle age, fair, slender, and delicate in appearance. When I first prescribed for him, he complained simply of some hurry of his breathing, and of a general feeling of distress. I found that his pulse, though regular, was very feeble, and beating 216 times in the minute. I thought he was about to die. I could not count the radial pulsations; but the beatings, or rather the waggings, of his heart, were easily numbered by means of the stethoscope. There was no murmur. This state of things lasted a day or two, and then ceased suddenly, the pulse falling to 72. This strange condition recurred three or four times, at intervals of some weeks or months. On one occasion, it continued about ten days, having followed a hurried and anxious journey from London to Oxford and back again. Again I became solicitous about my patient's safety; for he could not sleep, his breathing became difficult, his liver enlarged considerably, and his legs and thighs became anasarcons. The number of the rapid pulsations was always the same—216; and on this occasion, also, the change to a natural rate was abrupt; and it

happened when I was with him. I had counted the larger number, and was about to leave the room, when he exclaimed, "There! I feel that I am all right again;" and sure enough, upon placing my finger on his wrist, I found the pulse to be 72—*exactly one-third* of its recent number. From that moment, the peculiar feeling of distress ceased; the anasarca and the enlargement of the liver began to subside; and in a few days he was again well.

In (I think) the *fourth* attack of this kind, my patient died. I was absent from London at the time; but his body was examined by an intelligent practitioner, who reported that the heart was large, as if it had been distended; and its muscular walls were very thin and soft. He could detect no other morbid condition.

Dr. JOHN DAN. BROWN, of Rochester, Eng., adds a fourth case (*British Medical Journal*, July 6th, 1867, p. 6), as follows:

I entered the affection in my notes as dichronous action of the heart; and I considered it to be due to faulty innervation, either defective inhibition by the vagus or excitation of the sympathetic (lower cervical ganglion, according to recent researches).

Mr. Graves, aged 41, a married gentleman, an official at the Rochester Gas Works, was seen by me on January 13th, 1865. He had suffered from mental anxiety in connection with his duties, but had otherwise enjoyed good health. His residence at the Gas Works was marshy.

His first heart-seizure occurred on December 19th, 1864. My brother saw him at that time, and found the pulse 160, with short respirations. During the first week, the seizures came on at intervals (I do not remember whether daily or not), and lasted half an hour.

There appeared to be a congestive or inflammatory condition of the heart, for which my brother leeches and blisters, and gave calomel and opium, aconite, iodide of potassium, and salines, with satisfactory results as respects congestion. When I saw the patient, he was seated in a chair, breathing shortly, but not like a man under orthopnoea. The pulsations of the heart were 192, distinct and moderately forcible. There was no murmur.

Whilst I was in the house, the paroxysm abated almost suddenly, and the patient walked about the room well.

He told me that he felt quite well when at rest, but that exertion caused the seizures to recur. He was recommended to give up his situation and to try change of air as soon as might be possible. He was unable to leave the Gas Works, and continued to suffer from the heart-seizures. Liquor ammoniæ acetatis was employed as palliative treatment. He died suddenly on the 15th April, 1865. No post-mortem examination was obtained, although requested.

REMARKS. Emotional disorder (anxiety) was the first link in the chain of causation in this case. Next came the nervous disorder.

I have seen several cases of cardiac running-away action, reminding me of the running away of a horse, but only once before a case similar to the present; viz., runaway action of the interrupted form. I do not recollect the details of the first case, so I cannot relate it.

I know no means of arresting the runaway action; but I have lately tried the horizontal posture, *pur et simple*, as recommended for internal aneurism, and with encouraging results.

Runaway action sometimes occurs unaccompanied by organic lesion, so far as I can ascertain by examination during life. At other times, it coexists with fibrinous patches or with inflammatory conditions of the pericardium. I do not recollect whether I have noticed it in coexistence with murmur or with disease of the apertures. From what I

have observed, runaway action occurs under two forms : (a) the continuous, and (b) the periodic or interrupted. No one can confound runaway action with palpitation ; they are unlike in every way.

I regard runaway action as due to deficient inhibitive power of the vagus, and palpitation as due to excitation of the sympathetic. The benefit derived from the use of digitalis in Dr. Cotton's case renders this view of runaway action probable, for digitalis entones the heart.

A fifth case is given in the *British Medical Journal* for July 20th, 1867, p. 53, by ROBERT L. BOWLES, Folkestone :

A lady of a nervous, susceptible nature, was suddenly seized with faintness and sense of suffocation whilst attempting to get out of bed, three weeks after her confinement. The attendants thought her dying ; and, on my arrival, I found her apparently in extreme danger. There was a pinched and anxious look of countenance, great pallor, and the respiration was carried on with difficulty. There were severe lancinating pains in the heart, which was beating feebly, but clearly, distinctly, and regularly, 250 times in a minute. There was no abnormal sound in the cardiac region. The pulsations could not be counted at the wrist, nor at all times at the heart itself. The lancinating pains subsided, but only to return on the slightest exertion ; but an aching pain in the left side, and in the left shoulder and arm, remained for some time longer. This condition, in a less violent degree, lasted a few days ; but the pulse remained at 180 for upwards of a fortnight ; it then fell to 60, the normal pulse being about 90. The treatment consisted chiefly in the administration of ether and brandy. During the whole time there was no evidence of inflammatory lesion. This attack occurred six years ago. There has been one attack since, but less severe ; and now there is no evidence of organic disease of the heart.

In the second case, a lady was seized suddenly whilst standing at the window. On my arrival, I found her condition to be similar in all respects to my former patient ; but there was, in addition, a short stuffy cough and wheezy breathing. It was about the time of the catamenial period ; and she had frequently, at those times, suffered from numbness and tingling down one or other arm. Valerian, ether, and henbane were prescribed ; but, as the symptoms were still unrelieved, Dr. Alderson, who was staying here at the time, kindly gave me the benefit of his opinion. Two hours after he saw the patient the pulse suddenly fell to its normal standard, and the patient was well. I could not be so sure in this case of the number of pulsations, but they were over 200 in the minute. I was told that this lady suffered from albuminuria at that time, but she is still living. And it is somewhat remarkable that my first patient suffered from purulent discharge from the kidney.

The following letter, from JAMES EDMUNDS, M.D., on this subject, appears in the *British Medical Journal* for August 3d, p. 97 :

SIR : The letter of Sir Thomas Watson, which appears in a recent number, greatly increases the interest of this subject. Three cases of this most singular and distinctive condition are now before your readers ; and while they appear hitherto to have escaped notice in medical literature, that fact is not so very remarkable, when even Sir Thomas Watson speaks of them as "certainly a very rare form of disorder." I shall be glad to add a few remarks which suggested themselves to me in connection with my former letter, but which I omitted in consequence of the great value of your space at that time.

I was much struck with the fact that the rate of the heart's pulsation was *precisely tripled*, and had considered this triplication as in all probability analogous to the tripled rate we get in a vibrating *monochord* when the fundamental note subsides, and the twelfth

or second harmonic comes out. As musicians well know, and as may be observed by any one with an ordinary ear for music, if we strike one of the long strings of a grand pianoforte, and, by holding up the damper, allow the string to continue in vibration, we hear, after a few moments, that the original or fundamental note of the string has given place to its twelfth or second harmonic, and we see that two nodal points have appeared on the string, dividing it into three portions, each of which vibrates with thrice the velocity with which the string moved when vibrating uniformly in its whole length. After a few moments more, the string breaks up into smaller portions, and higher harmonics appear, which soon become inaudible. But the number of vibrations producing these successive harmonic sounds is, in every case, a simple multiple of the number which produced the original or fundamental note. Thus, if we strike the lowest note on the pianoforte, second C, we get thirty-two vibrations per second, when its natural note is produced; twice the number, if the string be made to divide at a single nodal point, and produce its first harmonic or octave, the third C; thrice the number, if the string be divided by two nodal points, and produce the second harmonic or its twelfth, the next C; four times the number, with its third harmonic, the second octave, and so on.

Again, in the falsetto voice we have notes precisely an octave higher than the natural ones. They are, in fact, doubtless the first harmonics of the natural notes, and are the result of producing nodal points in the vocal chords and a double rate of vibration in each segment. But, in the pianoforte wire, it is very difficult to get the first harmonic without mechanically touching the string so as to produce a central node artificially; and the second harmonic or tripled vibration, is that which almost invariably occurs. Now, just as many persons, especially those with bass voices, can, at will, assume the falsetto voice, and just as we may see the pianoforte wire change from one mode of vibration to another, so Sir Thomas Watson, in the case he has recorded, actually witnessed the heart take on its natural rate of action and instantly change from the performance of 216 beats per minute to 72, or *exactly one-third* of its previous number.

Of this remarkable physiological fact there can be as little doubt as of any direct physical fact, as the three examples bear the closest possible similarity; but no explanation of this singular occurrence was suggested even by Sir T. Watson. I would suggest that the phenomenon is to be accounted for by an actual triplication of the heart's action analogous to that triplication which we see occur naturally in the vibrating monochord, and that it should be called **HARMONIC ACTION OF THE HEART**.

The same train of thought also serves to throw light on other facts connected with the heart's action, and totally unconnected with those grosser conditions which produce comparatively small accelerations or retardations of its usual rate of action. For instance, the foetal human heart moves with twice the velocity of that of the adult man. The heart of the elephant pulsates, if I recollect rightly, twenty-six times per minute, and that of the horse forty. The heart of woman pulsates about one-sixth more rapidly than that of man; and I have long been in the habit of noticing that, other things being equal, there is a direct ratio between the slowness of the pulse and the bulk of the man, and that an unusually slow pulse is generally a sign of large or dilated heart, although no other symptoms have occurred to draw attention to that important organ.

Again, it is well known that mental emotion often produces a very rapid action of the heart, attended with a suffocative feeling and a tendency to syncope; and this kind of heart-action is not at all like the laborious action which attends violent exertion of the mind or body, as in walking up-hill or in speaking extempore to large masses of people. Probably it may be a transient triplication or duplication of the heart's action, owing to some alteration in the innervation of the heart or some want of proper harmony in the

action of its fibres. The facts connected with the action of the heart in various mammals go to show that the normal rate of pulsation depends, as a general rule, upon the dimensions of the heart, just as the pitch of a note, other things being equal, depends upon the length of the vibrating string.

I am, &c.,

JAMES EDMUNDS.

FITZROY SQUARE, W., June, 1867.

Characters of the Arterial Pulse in their Relation to the Mode and Duration of the Contraction of the Heart in Health and Disease.

Dr. J. BURDON SANDERSON, F.R.S., Physician to the Hospital for Consumption, and Assistant Physician to Middlesex Hospital, has delivered at the Royal College of Physicians, London, a lecture on the order of succession of the muscular movements of the heart and their duration, as observed by the sphygmograph (*British Medical Journal*, July 13, 1867, p. 19). After referring to the notion of Haller, that there is a *complete alternation* between the contractions of the auricles and ventricles, and that the time occupied by each cavity in contraction is equal to that in which it dilates (*Haller, Elementa Physiologiæ*, 1757, vol. i, p. 399), and to that taught by Harvey, a century before, who showed that the contraction of the heart is but *one movement*, in which both auricles and ventricles take part, and that during the interval between each contraction and its successor, the heart is absolutely at rest (*Harvey, Opera Omnia*, London, 1776, p. 33), he deduces the recent experiments of Chauveau, who, by means of a recording dynamometer, found that the exact time of the contraction of the left ventricle of a horse was about one-fifth of a second. The observation of the pulse by the sphygmograph is another method of recording the same thing. This instrument is not merely useful in physiological research, but is also of value to the pathologist, enabling him to investigate the mode and measure the duration of the ventricular systole in disease.

In every arterial pulsation four events are to be distinguished.

1. *The Sudden Primary Expansion of the Artery.* It is due to a sudden jerking forward of the particles of liquid, and is of the nature of a commotion or shock, in which each particle communicates its movements to its neighbor. No two parts of the artery expand at the same time. Each primary expansion of the arterial wall at any given point is immediately followed by an equally sudden contraction, and then by a sudden expansion and contraction of less extent, and these by a third, and so on; so that the artery is thrown into a state of rapid vibration, which is more or less marked, according to the suddenness of the shock of the heart and the elastic yieldingness of the arterial wall. (See Figs. 3 and 4.)

2. *The Second Event* denotes the degree and duration of distension produced by each contraction of the heart, in the particular artery to which the sphygmograph is applied. It is indicated in the sphygmographic tracing by a curved line, the concavity of which is downward. Its normal form is shown in the dotted lines in Figs. 1, 2, and 6. It is that part of the tracing which is most subject to variation. In many varieties of febrile pulse, it is entirely absent; in the pulse of arterial resistance, usually met with in hypertrophy of the left ventricle, it attains its greatest development. (Figs. 5 and 6.)

3. *The Diastolic Collapse, or Third Event.* In studying the arterial movements which occur during the diastolic interval or pause, the commencement of which is followed by the closure of the aortic valve, the same distinction is to be drawn between those effects

which are due to changes of blood-tension and those which are vibratile. Just as the contraction of the heart produces a sudden, merging into a more gradual, expansion of the arterial system, so the *cessation of contraction* manifests itself in a shrinking or collapse, which is more or less violent, sudden, or gradual, according to the state of the circulation; or, adopting instrumental language, just as the bursting open of the aortic valve is indicated by a vertical ascending straight line, followed, by a curve of which the concavity looks downward, so the movement which leads to the closure of that valve is expressed by a vertical descending line, ending in a curve of which the concavity is upward.

FIG. 3.



Fig. 3. Pulse of nervous fever ("prostration with excitement"), 100 per minute, observed in a case of tubercular pneumonia; a well-marked sensation of thrill was communicated to the finger. The artery expands violently, and immediately afterwards begins to collapse; but the collapse is interrupted by a series of vibrations, which show themselves distinctly in the tracing. The dotted line, commencing from the middle of the diagram and extending to the end, denotes the normal form.

N. B. In each figure the vertical stroke indicates the closure of the mitral valve, i. e., the commencement of the primary expansion, while the vertical dotted line denotes the closure of the aortic valve and the end of the diastolic collapse. That part of the tracing which immediately precedes the diastolic collapse is the *second event*. That part which immediately follows it is the *diastolic expansion*, or fourth event. All of the tracings are double the natural size.

FIG. 4.

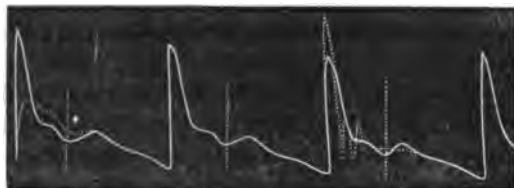


Fig. 4. Atonic pulse of a healthy person of sedentary occupation, residing in town. The primary expansion is too violent, while the second event is defective. Under the influence of an anodyne dose of morphia, it would assume the form indicated by the dotted line on the left of the figure: a moderate dose of alcoholic stimulant would give it the form shown on the right.

FIG. 5.

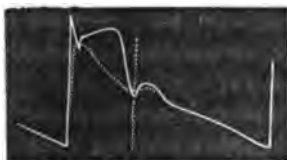


FIG. 6.



Figs. 5 and 6. Pulses of hypertrophy of the left ventricle, with dilated arteries. The one differs from the other in this respect only, that the primary expansion is more ample in Fig. 5, and that in Fig. 4, the diastolic collapse is not so sudden, indicating that the arteries are more elastic.

4. *The Diastolic Expansion, or Fourth Event.* The fact that every artery again expands after the collapse at the end of the systole, is one which has occasioned much speculation, especially since its constancy in all conditions of the circulation has been known. In the pulse of adynamic fever, it has been long recognized as communicating to the pulse a special character, that of diorism. Its cause has been much discussed.

According to Naumann, it is produced by what he calls a recoil of blood against the aortic valve; and the explanation of it given by Marey is not altogether dissimilar, although differently expressed. That such a recoil exists, we have already seen; but that this is the explanation of the subsequent expansion of the artery, I have myself disproved by numerous experiments, to which this is not the proper place to refer more particularly.

What, then, is the cause of dirotism? Without entering more minutely than is necessary into the physical aspects of the question, I may be permitted to observe that, from the nature of the phenomenon itself, it implies that the disturbance of pressure-equilibrium in the arterial system, which is necessarily produced by the injection of blood from the heart, is excessive. For, if it were otherwise, the arterial distension would subside gradually and uninterruptedly, and be expressed by an unbroken curve, the form of which would correspond to the velocity of the capillary circulation.

Dr. Sanderson then gives the following series of propositions as explanatory of the text:

It cannot be too often repeated that, with the one exception of aneurisms, the sphygmograph is not an instrument of diagnosis; for affections the most diverse communicate to the pulse the same graphical characters. Its use is to enable the physician to investigate the state of the circulation and circulatory organs in diseases of which the general nature is already recognized, with reference to (1) the mode and duration of the contraction of the heart, (2) the soundness of the arteries, and (3) the relative quantity of blood contained in the arteries and veins, or, in other words, the balance of pressure between the venous and arterial systems. If it can be shown that the sphygmograph affords a reliable means of determining these most important conditions of disease, it is quite enough, without forcing it to applications of which it is from its very nature incapable.

(1) The heart possesses in itself the power of contracting rhythmically. This faculty may be exercised either *automatically*, i. e., *independently* of the central nervous system; or partly automatically, partly under the influence of impressions reaching it through the spinal cord. The researches of Bezold have shown that the nerves through which these impressions are conveyed are those which, originating from the spinal nerves and passing through the thoracic and lumbar ganglia of the sympathetic, converge to the posterior cardiac plexus. The same physiologist has also shown that it is through these channels that the modifications of the mode of contraction of the heart which results from emotion and suffering are induced, and render it probable that the perverted actions of the heart met with in fever and other constitutional disorders are also spinal in their origin.

A large number of facts have led me to the physiological inference that, *whenever the heart contracts of itself, i. e. automatically, it contracts gradually and peristaltically, its constituent fibres being brought successively into action; and that, in so far as the movement is deprived of its automatic character by the influence of stimuli acting through the spinal cord, it becomes sudden and instantaneous.*

Sphygmographically, suddenness of contraction manifests itself in verticality and amplitude of the primary ascent of the tracing; while in those forms of pulse which correspond to a more gradual mode of contraction, the first event is indistinguishable. Hence, we are led to associate absence or suppression of the first event with all those conditions of the circulation in which the heart may be supposed to act automatically; and to believe that, whenever the artery expands sharply under the finger at the moment of the shock of the heart,—whenever, in short, the first event becomes a prominent feature of the tracing,—we have evidence therein that the systole of the ventricle is no longer peristaltic, but reflex; and that, through the spinal cord, influences are at work (whether originating from emotions, sensations, or abnormal constituents in the blood) which are not altogether

normal. In all such cases, a sharp sound having the character of the second sound, is heard on auscultation in the neighborhood of the præcordial impulse. To this I propose to give the name of shock-sound: it is a sign of considerable importance. (Compare Figs. 1 and 2.)

(2) *Absence of Elasticity* is inseparably associated with hypertrophy and dilatation of the arteries, and increased arterial resistance. In the natural state of the circulation, the increased tension produced in the arteries by the ventricular systole manifests itself partly during the systole itself, partly during the succeeding pause; the agent in thus distributing the effect being obviously the arterial elasticity. When the arteries are not elastic, this distribution of tension does not occur; and consequently we find the arteries relatively more tense during systole, less tense during diastole. Further, the increased resistance prolongs the systolic period. Hence the absence of elasticity is indicated sphygmographically thus. The diastolic collapse is deferred until immediately before the closure of the aortic valve (see Figs. 7 and 8), a fact which is indicated in the tracing by a nearly vertical line. The length of this vertical descent indicates the amount of the sudden diminution of arterial pressure, which coincides with the cessation of the ventricular systole.

(3) *Relative Fullness of the Arterial System.* Inasmuch as the quantity of blood contained in the circulatory system is more or less constant, it follows that there must be an inverse relation between the quantity contained in the arteries and veins at the same time, so that when the one increases, the other must proportionately diminish. Now, it is the function of the heart, if one may so express it, to preside over this relation, by increasing the vigor of its contractions whenever the arterial pressure becomes insufficient for carrying on the circulation, and relaxing its efforts when the arteries become too full. So important, indeed, is the maintenance of the balance of tension between arteries and veins, that it involves the whole question of the competency of the heart to perform its mechanical functions.

Undue impletion of the arterial system shows itself in *postponement of the arterial diastolic collapse*, which means, as regards the heart, that, in consequence of increased arterial resistance, the *left ventricle continues full for an unnaturally long period*—not collapsing, indeed, until its muscular contractility becomes exhausted. In this state of the circulation, the first sound of the heart is prolonged up to the moment when the second sound is audible. Figs. 7 and 8.

FIG. 7.



FIG. 8.

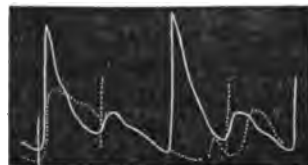


Fig. 7. Dicrotic feeble pulse of mitral regurgitation. It is seen to differ from the normal dotted line, principally in its great frequency, and in the depth and amplitude of the diastolic notch. This pulse closely resembles the undulating pulse of typhus. In the one disease the contractile force is *weakened*, in the other it is *wasted*. The effect is the same: the systole is ineffectual.

Fig. 8. Dicrotic pulse observed during an attack of pneumonia in a man of feeble constitution. By comparison with the normal, which is represented by a dotted line commencing from the left of the figure, it is seen to differ, (a) in the too great violence of the primary expansion; (b) in the abolition of the second event; (c) in the postponement of the diastolic expansion. In pulses which are still more dicrotic, the diastolic expansion occurs still later, as shown by the dotted line on the right. In such pulses, the administration of alcoholic stimulus shortens the interval, i. e., brings the pulse nearer to the normal.

27th, p. 57) to illustrate these principles by cases with their sphygmographic tracings. The most characteristic are those of aortic regurgitation.

FIG. 9.

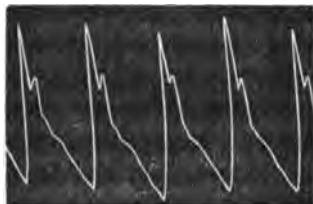


Fig. 9. Pulse of aortic regurgitation. R. H., aged 36.

FIG. 10.



Fig. 10. The same. H. K., aged 38.

Rupture of the Heart.

Dr. W. B. LEWIS made the following remarks at a meeting of the Pathological Society of New York city, October 9th, 1867 (*Medical Record*, November 15th, 1867, p. 412):

On the 9th of October, at the request of a member, I presented to the New York Pathological Society the heart of a physician of this city who died in his 60th year, after an illness of about ten hours, of rupture consequent upon fatty degeneration of the heart.

On the Saturday previous the doctor was in his usual health. On Sunday morning he arose, but having a headache and feeling out of sorts, went back to bed. During the day, which was passed quietly, he took some light food, and at tea-time joined the family and seemed much better. About 9 P.M. while writing some letters, he was seized with a severe pain in the stomach. It passed off in a few minutes, so that he wrote again, but it soon returned, and was then felt in the back also, between the shoulders. The agony became intense, and was not relieved, although fomentations and sinapisms were applied, and opium and chloroform were taken internally. He was sure he had stricture of the stomach, and to overcome this would rise from the bed and provoke vomiting by drinking warm water freely, and then lie down and strain like a woman in labor. Although he was fully conscious of the influence of the medicines taken, the pain continued without abatement until an early hour in the morning, when he slept for a few minutes while sitting in a warm bath. About half-past 7 A.M. he arose and renewed his efforts to remove the difficulty by vomiting. To accomplish this he passed his fingers as far as possible into his throat, and strained frightfully. As soon as he was again upon the bed he said, "Something has given way; there will be a change soon." He died a few minutes after this, breathing most quietly to the last.

Several times since last January he had suffered in a similar manner, but less severely and for a shorter period, and on each occasion had gradually found relief.

The post-mortem examination was made early on Wednesday morning. The body was then very thoroughly chilled and stiffened by the ice with which it had been surrounded. The subcutaneous layer of adipose was more than an inch in thickness, and that beneath the peritoneum more than one-quarter of an inch. The lungs appeared normal. A quantity of blood-stained serum escaped from a wound in the pericardium, produced while removing the sternum. The abdominal organs, except a small portion of the liver, were hidden beneath a mass of fat. The great omentum was strangely loaded, being not less than an inch and a half thick at its junction with the transverse colon. The stomach was entirely normal, presenting no thickening or other change at any part of its walls, except that in the fundus there was a slight blackish stain upon the mucous membrane. It contained

about an inch of a thick, greenish fluid, such as is found during the later stages of digestion. The liver was engorged with blood, and evidently fatty; the mottling produced by intra-lobular congestion being quite marked. The gall-bladder was full of bile, a little thinner and lighter in color than usual; no concretion was found in it or its duct. Upon slitting up the pericardium an irregular laceration of the walls of the heart, three-fourths of an inch long, was at once noticed, situated about midway, from above downwards, and a little to the left of the inter-ventricular septum. The visceral pericardium, however, was torn only at two points, the larger of which would admit the end of a large-sized probe. Placing the finger upon this portion it could be easily depressed, showing that the walls were very thin and much softened beneath. The pericardium contained some loosely clotted, dark blood, not having the arterial hue, nor by any means forming a cast of the sac.

Upon opening the right ventricle it was found firmly contracted. No lesion of either valves or cavities was found upon this side. On the left side, in the sinuses of the semi-lunar valves, were whitish, slightly elevated spots of atheroma in an early stage. Near the apex of the ventricle, anteriorly and to the right, was an extensive *transverse* laceration, rather more than an inch in length, the columnæ appearing discolored, and ragged upon its edges. The new cavity thus produced was evidently not made at one time, as it connected with at least two sinuses which could be traced upward toward the base of the organ beneath the pericardium and fat. One of these opened into the right ventricle through one of the venæ thebesii, near the origin of the pulmonary artery, and upon the right surface of the septum. A peculiarity of this rent was that it was of the *transverse* variety, which numbers about one-fourth of the recorded cases, the majority being parallel with the fibres of the heart. There were two other partial ruptures, one to the left, and another below this fatal one; it seemed that either of these might in time have caused death. The tissue of the organ was of a duller shade than is normal, and remarkably friable, more so than the liver in this case.

A small portion clipped from the neighborhood of one of these partial ruptures was examined microscopically. Much the greater number of the fibres were granular, semi-opaque, and either devoid of, or but faintly showing their striæ; some had a column of more or less irregular fat globules occupying their centres; some, though few, were transparent, and presented the striæ clearly. Numerous free oil-globules, of various sizes, were seen floating in the field. The granular particles were not resolved into globules by a power of 500 diameters, although it was supposed that such was their real form.

Allow me to call attention to the location of the greatest and most constant pain in the *epigastrium*. This obscured the diagnosis, and has remained in a measure unexplained, to some at least, by the autopsy. I have recently learned of a similar case in which, after a few hours of great agony, also referred to the *epigastrium*, and thought to be due to biliary calculus, the patient died of rupture of the left ventricle of the heart.

(c) DISEASES OF THE ORGANS OF DEGLUTITION AND DIGESTION.

A Case of Esophagism.

Dr. J. S. B. ALLEYNE communicates to the *St. Louis Medical Reporter*, for September 15th, 1867, p. 417, a very interesting statement of this curious affection:

Eight years ago he attended a young girl, then eight years old, for an ordinary attack of bilious fever, with a slight complication of bronchitis. The disease passed away readily enough, though a complete restoration to health was deferred by a general pros-

tration of the system, approaching anæmia, for which ferruginous tonics were administered. The only complaint made in the course of recovery was a seated pain, about midway in the œsophagus, which annoyed without producing real suffering. As time progressed, however, an occasional vomiting took place, merely of the food or drink, unaaccompanied with nausea; in fact a regurgitation. This increased in frequency until at last nothing swallowed could be retained. Evidently the food, solid or fluid, did not enter the stomach; the ingesta could be felt descending to a certain point, there to be arrested and immediately returned. The appetite was at times inordinate and everything tasted natural. Ultimately, the patient recovered sufficiently to sit at table. She would eat, though certain of the immediate result, to satisfy if possible the cravings of hunger, but before the food, solid or liquid, could have time to reach the stomach she arose and hurried out, to spit it up. Of course this became a source of exceeding annoyance to the patient herself, and to the family. It isolated her entirely from friends, and as she grew up withdrew her more and more from society. At the commencement, when this attack of spasm of the œsophagus developed itself, there was extreme emaciation and prostration; the patient was tormented with constant hunger and thirst, and at times her life was despaired of. Still she held along for weeks and months, until at last there seemed a positive gain. Strength increased until she could sit up, finally move about, though after a long period; then she could approach the table—finally participate in the occupations of the family; she gained flesh, and seemed well enough, though always a delicate, undeveloped girl. She became accustomed to the affliction, despaired of a cure, and submitted with resignation to her condition. This regurgitation, or eructation of ingesta, lasted at least eight years. During the last year she became afflicted with an obstinate conjunctivitis, from which she is now gradually recovering. Her appearance has always been anæmic, though latterly not extremely so; her strength of late considerable, so that she could endure to some extent the exercise of young girls. Menstruation was established at the proper time; the system, in fact, was restored to as complete health as compatible with the amount of food entering the stomach. Within the last six months she has entirely recovered from this distressing complaint; it disappeared rapidly, in the course of one day, and has never since returned. Of course, during such a long period of distress, every remedy was tried that the experience of various physicians could suggest; not only medicine, but surgery failed to give relief. In later years, all efforts to alleviate were suspended as useless, so that finally the disease wore out of itself.

It is not to be supposed that the stricture of the œsophagus was in this case complete; life was barely sustained in the beginning; the first mark of increase of strength evidenced an increase of nourishment to the system; but apparently all food, solid as well as liquid, was thrown up; then again, at the last, while never satisfied, the patient's craving for food was not so strong as at first; a certain feeling of satisfaction seemed to be derived from swallowing, though immediately afterward the food was rejected. But certainly the case was remarkable for the length of time in which the constriction existed; instances are mentioned of a long persistence of the disease, but always with certain periods of intermission, when food could be swallowed; here apparently there was no intermission during the extent of eight years, and then immediate and complete disappearance. Could the disease have been the result of inflammation? The rather sudden appearance would have contradicted this view. The only symptom of inflammation was the pain at first, but this might have arisen from the unnatural condition of the œsophagus; other symptoms were wanting. There seemed to be no mechanical cause externally; there were no enlarged lymphatic glands; there was no disease of bloodvessels. The anæmia from previous disease, the sudden advent, the sudden disappearance, the absence

of inflammatory symptoms, the predominance of the nervous temperament, all seem to demonstrate a spasm of the œsophagus. The recovery from the extreme exhaustion produced by starvation at the earliest period of the disease, and the duration of the whole attack, render the case not only interesting, but remarkable.

Death from Aneurism of the Right Ovarian Artery.

Dr. W. M. WHITMARSH, of Hounslow, reports, in the *British Medical Journal*, August 31st, 1867, p. 177, a case of death from an aneurism of the right ovarian artery, large enough to contain a small pigeon's egg. The patient was a woman, 37 years of age. She "had never been regular," but when she menstruated the discharge was pale and scanty, and accompanied with pain. She felt the commencement of the attack when she was lifting a basket of clothes from a cart.

Hæmatemesis in a Child, aged Three Years and Ten Months.

A case of hæmatemesis, in a child not four years of age, is reported in the *British Medical Journal* for August 3d, 1867, p. 86. It occurred at the St. Mary's Hospital, under the care of Dr. Sieveking. Hæmatemesis is of such rare occurrence in young children that this deserves to be placed on record. The child had been so very ill-fed that his blood had become considerably impoverished, and a scorbutic diathesis had been engendered, to which Dr. Sieveking was inclined to attribute the hemorrhage. Upon the use of dilute sulphuric acid and opium, and afterwards of tannin and cod-liver oil, he gained flesh considerably, and was discharged quite well in eleven days.

Intestinal Obstruction.

Dr. SIMPSON reported, March 6th, 1867, to the Manchester Medical Society (*British Medical Journal*, June 17, 1867, p. 653) the details of a case of intestinal obstruction. The patient, a lady, aged 49, fell last summer, and felt pain in lower portion of abdomen immediately afterwards. Five or six weeks afterwards she noticed some black clotted blood in the stool. Bowels generally regular, but for some months before present attack she was subject to attacks of sudden severe pain in the lower part of the abdomen. On the evening of 14th February, feeling some uneasiness in the bowels, she took two aperient pills, which produced griping but no evacuation. During the 15th she had violent colicky pains, accompanied with bilious vomiting. No hernia nor abdominal tumor. Very slight tenderness on pressure. Pulse 80; appetite moderately good. The case was treated with morphia, hydrocyanic acid, warm poultices, and enema given with the O'Beirne tube, which brought away broken fragments of fæces. She died on the 22d of February.

An examination was made next day. The whole front of the abdomen was occupied by distended coils of the large intestine. A complete twist of the colon was found at the lower portion of the sigmoid flexure. This had occurred at the site of a constricted portion of the bowel, which was produced by the contraction of an ulcer of some date. The aperture would only admit the tip of the finger. A portion had become gangrenous, and was adherent to the abdominal wall. The intestines were quite flaccid above the ileo-cæcal valve.

Dr. Simpson then considered the question of diagnosis, and remarked on the great obscurity of the case. The only points in the history bearing on stricture from ulceration were, the fall producing pain low down in the abdomen, and the passing of black clotted

blood some weeks afterwards, as well as the frequent attacks of spasmodic pain, probably from contraction of the constricted part. Was the fall the cause of the solitary ulcer? From the manner in which the tube passed into the bowel, it was difficult to resist the conclusion that it had passed beyond the stricture. This supposition was supported by the fact, that much of the water injected was retained. It was unlikely that the tube had curved on itself, as the end of it would have come out of the rectum. A case, reported by Dr. Peacock in the *Pathological Transactions*, was referred to as being in many respects parallel to this, and also as showing the great difficulty of diagnosis that sometimes arises. With regard to operating, Dr. Simpson thought that, where the obstruction could not be overcome, and an approximately correct diagnosis could be arrived at, the patient should be offered the chance. But it was not justified till urgent symptoms arose.

Ascites from Lesion of the Liver.

Dr. DE FARIA, in the *Gazeta Medical da Bahia* (Brazil), reports a case of ascites dependent on some lesion of the liver. Operations of paracentesis were performed, soon after each other. Peritonitis followed, but was combated so well, that the man was cured. Drastic purges, decided diuretics, and a dietetic regimen were directed. The peritonitis was combated with calomel, opium, and mercurial frictions. When the inflammation subsided, the perchloride of iron in conjunction with mild diuretics and sudorifics was exhibited, and then generous diet.

(d) DISEASES OF THE URINARY AND MALE GENITAL ORGANS.

Fecal Elements in the Urine.

In the July meeting of the Royal Imperial Society of Physicians of Vienna (*Wiener Med. Wochenschrift*, July 13th, 1867), Prof. HELLER calls attention to a new form of cystitis. The examination of the urine in various forms of cystitis shows results differing very widely in a chemical as well as microscopic point of view. In fistulous ulcers where the bladder and rectum communicate, it is a well known fact that not only the urine enters the rectum, and causes fluid evacuations, but fecal matter also enters the bladder, so that the urine appears mixed with the contents of the rectum. More surprising, however, is the fact that in cases where the bladder is entirely closed, fecal elements sometimes make their appearance in the urine. Prof. Heller has seen as many as twenty cases of this kind. Part of them were observed in the poor-house, and a part in private practice. According to his experience, this feculent form of cystitis has been found in cases of cerebritis, myelitis, and also in lithiasis, and is of the most grave prognostic significance, as it is usually the messenger of speedy death. In order to discover this latent fecal matter in the urine, Prof. Heller treats the same with concentrated sulphuric acid, and afterward distills it in a dropping apparatus. In the mass remaining behind, there was found capron and caprinic acid and other fecal matters combined with fatty acids. In this form of cystitis the urine contains but little mucus and less sedimentary material than that occurring in other forms of cystitis.

Citrate of Soda in Diabetes.

La France Médicale, October, 1867, says: The *Journal of Medical Chemistry* calls attention to a fact, which, if confirmed, will be fruitful of the most important consequences. We refer to the property of citrate of soda in making glucose in diabetic urine disappear. Such, indeed, seems the result of a good many experiments with this

salt. It was administered in the dose of from four to five grammes daily, mixed with the food, like common salt.

What is its mode of action?

It possesses this advantage over the carbonate of soda, that it will not interfere with the digestive functions; and it furnishes, in a more efficacious manner, the alkaline carbonate necessary to the chemical transformation of glucose. The experiments will be continued.

Treatment of Hæmaturia.

In the statement of a case of cancer of the bladder (*British Medical Journal*, June 19th, 1867, p. 631), Dr. RAMSKILL, of London, mentions that the hæmaturia was checked by half-drachm doses of bitartrate of potassa ter die. In two drachm doses it is equally as effectual in checking bleeding from hæmorrhoids.

(c) EXANTHEMATOUS DISEASES.

Prevention of Pitting of the Face by Small-pox.

In the *Lancet*, June 29th, 1867, Dr. C. BLACK, M.R.C.P., London, reports several cases of small-pox affecting patients who had not been vaccinated, in which, acting upon the knowledge of the influence of *light* on the growth and development of both plants and animals, and of the destructive action of *oxygen* on diseased tissues, he excluded both these agents from the faces of his patients respectively, with one or two exceptions, for the purpose of proving their influence in contrast when exposed.

He shut out the light, and kept the room in which the patient was confined, so dark that a candle was required when any special work was required to be done, and guarded the face from the action of the oxygen by keeping it constantly covered with fresh hog's lard.

All the cases in which this plan was strictly followed recovered *without a single pit*. The others, in which the plan was not strictly followed, were more or less pitted in proportion to the deviation.

The medical treatment pursued in each of the cases consisted in administering from one to two drachms of the solution of acetate of ammonia, with two or three drops of the solution of the arsenite of potash, every second or third hour from the commencement of the initiatory stage to the acumination of the pustules; from which period to the completion of the stage of desiccation, the dilute nitric acid, in doses of three or five drops, was substituted for the acetate of ammonia only.

The diet consisted chiefly of milk and light farinaceous food, with cooling drinks during the early stage of the disease; and of these, with the addition of beef tea, chicken broth, and similar food, as the maturation of the pustules progressed. In only one case was a small quantity of wine allowed during convalescence.

Thorough ventilation of the patient's room was maintained.

Dr. Black concludes his paper substantially as follows:

If we believe in the neutralizing power of arsenic on blood-poisons, and in the antiseptic and tonic properties of nitric acid, we can readily understand how these agents may weaken the power of the variolous poison in the blood, and thus modify its action on the skin. That arsenic possesses this power, I have long been convinced by its effects in the treatment of cholera, typhoid, intermittent, and other fevers.

In cholera and typhoid fever there is no remedy of equal value. Of the influence of nitric acid in typhoid fever, Dr. Chambers, I believe, says the same thing; and in this opinion he is supported by the practice of physicians of a past generation.

Entertaining a high opinion of nitric acid in blood-poisoning, I have, for some time past, employed it, in conjunction with arsenic, in the treatment of septic diseases, and the result has justified my expectations. I cannot, therefore, doubt the efficacy of either of these remedies, or of the combination of the two, in the treatment of small-pox.

In the initiatory and vesicular stages of this disease it is, in my opinion, better to give the acetate of ammonia in conjunction with the arsenical preparation, than the nitric acid with the arsenic; and better again to give in the pustular stage the arsenic and acid together, than to continue the ammonia with the arsenic.

This opinion is based upon the following reasons:

The skin is the outlet by which Nature seeks to relieve herself of the variolous poison.

Acetate of ammonia promotes the action of the skin; nitric acid does not. Therefore acetate of ammonia, given in the early stage of small-pox, consists in localizing the disease, and in removing the *materies morbi* from the blood to the skin. When this has been accomplished, which is the case on the acumination of the pustules, nitric acid is henceforward beneficial, not only for its antiseptic properties, but for the reason that it reduces the vessels of the skin to their natural diameter, and thus tends to the desiccation of the pustules.

From the commencement to the end of the disease, the arsenite of potash is given on the principle of destroying or neutralizing the variolous poison in the blood.

It is thus a fit associate for the acetate of ammonia in the early stage of the disease; and for the same reason, and because of its tonic properties, it is properly associated with the nitric acid during the stages of pustulation and desiccation.

One important fact, in connection with the treatment of the cases, remains to be noticed. It is the total absence of secondary fever in those cases which were of a confluent character. This result cannot, perhaps, be attributed solely to the exclusion of light, nor yet alone to the influence of the remedies employed. It was more probably due to the united influence of all the means adopted.

Dr. Black is confident that the plan of treatment specified will effectually prevent pitting of the face, and carry the patient safely through the trying ordeal of this loathsome disease.

Does Belladonna Produce a Rose-Red Rash?

To settle this question, Dr. H. W. FULLER, Physician to St. George's Hospital, relates a number of experiments in the *Lancet* of June 8th, 1867, which seem to settle this point in the negative. Dr. F. concludes his article as follows:

I know of no statement which admits more easily of refutation by direct experiment than that belladonna produces a rose-red rash; and inasmuch as there is none which, being wholly groundless, has obtained more general currency, and has exercised a wider influence on the treatment of disease, it is very desirable that the truth should be known.

Remedy for "Camp Itch."

In a communication to the Cincinnati *Lancet and Observer* (August, 1867, p. 489), Dr. F. W. HUNTER, of Doddsville, Illinois, gives the following remedy for the "camp itch:"

Take four ounces fresh May-apple root, put into one pint of water, boil down to two ounces, and add two ounces lard and half ounce tinct. iodine; scent with oil bergamot, q. s.

Wash the affected parts with Castile soap and water, and immediately apply the ointment. Two applications will suffice.

OBSTETRICS

AND

DISEASES OF WOMEN AND CHILDREN.

PART I.—OBSTETRICS.

Uterine Pregnancy of more than Five Years' Duration.

Dr. Cox, of Frankfort, Indiana, presents in the *Western Journal of Medicine*, July, 1867, p. 385, the history of a case, in which the following are the principal points.

Mrs. A——, married, about eighteen years of age, was seized with convulsions on the 30th of October, 1861. She was then, as she supposed, in the seventh month of utero-gestation. She had more than forty convulsions without uterine pain or contractions. A few days subsequently she had pains which were supposed to indicate commencing labor. A physician was sent for. He administered an anodyne, and she passed along without anything unusual occurring until the 17th day of November, when, just eighteen days from the first of the attack of convulsions, uterine pains recurred. Dr. Dunn believed her in labor; thought that he felt some part of the *foetus* presenting, but does not now remember the presentation. The pains seeming of an irregular character, he gave an opiate and retired; when morning came the patient was quite free from pain.

A few days subsequently, there was a free secretion of milk, which continued several days, and was with difficulty arrested.

For a month or six weeks the catamenia appeared, and occurred regularly for nearly four years; then free hemorrhage, which lasted several days, the patient passing large clots of blood. The hemorrhage gradually ceased, nor was there, after this, any discharge from the vagina, nor any vicarious menstruation.

Dr. Cox first saw the patient on the 10th day of May, 1867; found a large pyriform abdominal tumor occupying the median line, perhaps a little more prominent upon the left side, and extending an inch and a half above the umbilicus; it seemed solid, and of but slight mobility.

The patient was apparently laboring under an attack of peritonitis; there were intense soreness over the entire abdomen, fever, red tongue, occasionally profuse perspiration, etc. But under the influence of opiates, hot fomentations, and subsequently tonics and nutritious diet, she rallied, and was able to be up most of the time.

Subsequently she had chills, fever, and sweating, and the tumor appeared to point on the right side, about two inches and a half lower than the umbilicus, and about the same distance from the median line.

After having become fully satisfied of the adhesion of the peritoneum to the abdominal walls, and there seeming to be fluctuation in the enlargement, an exploring needle was introduced, and an offensive liquid and gas escaped by the groove of the instrument. The patient being at this time extremely prostrated, and averse to any further surgical inter-

ference, it was deemed best to relinquish all attempts at further investigation until she should again rally. She was ordered stimulants in increased doses, anodynes, tonics, and nourishing diet; in short, a general supporting treatment.

The patient improved somewhat in strength. Soon the tumor again became more prominent, and increased in size. It was now cut into with a sharp bistoury, an incision of three-fourths of an inch being made; a considerable portion of gas, and very thick, offensive fluid, so very offensive that one could scarcely stay in the room, were discharged. From this time there was a continual discharge until the patient's death, which occurred on the 4th of August, some four or five weeks subsequent to the time when the puncture was made. The patient was very feeble—indeed, only living, as it were, from day to day—and was unwilling to have the opening in the abdomen enlarged sufficiently to enable Dr. Cox to ascertain the true condition.

Post-mortem twelve hours after death, was made, assisted by Drs. Dunn, Douglass, and Brown. Intestines healthy, with the exception of peritoneal adhesions. The uterus partially adherent to the abdominal walls; its fundus had been destroyed by ulceration, and yet the adhesions were so perfect, that none of the uterine contents had escaped into the peritoneal cavity. Part of the body and of the neck of the womb was healthy; the rest of the neck was enlarged, elongated, and felt rather flabby. Just above the neck the walls of the womb had adhered, and were perfectly united to the extent of three-fourths of an inch—the adhesion so thorough that it could not be broken up. The remains of the fetus were found lying in this ulcerated cavity, and the head seemed to be in the left iliac region. The flesh had nearly all sloughed off the bones, and as a natural result, the tumor had gradually decreased for some time previous to the death of the patient.

Prolapse of the Funis.

In the *Detroit Review of Med. and Phar.* (September, 1867, p. 405), Dr. STEDMAN calls attention to a case in his own experience where the cord was hanging down through the os uteri, and in which he was obliged to resort to the "postural treatment" of T. Gaillard Thomas. His mode of procedure was as follows:

The patient was requested to take her position on the elbows and knees, which she readily did when the necessity for the posture was explained. After carrying the right hand into the vagina, I succeeded, by a little manipulation, in returning the whole cord behind the ear of the fetus. The hand was kept on the aperture where the cord had disappeared till two slight pains had occurred, and after twenty minutes the woman was released from the constrained posture, and allowed to come over on her left side. There being no further appearance of the cord, and the pains being feeble and slow, she was allowed to leave the bed and walked about the room. In two or three hours the contraction of the womb grew vigorous, and after a very hard labor, she was delivered of a large, live boy.

Rigid Perineum.

Dr. REEVE, of Dayton, Ohio, reports a case which he thought required incision to assist delivery (*Cincinnati Journ. of Med.*, June, 1867, p. 357). After quoting various authorities who have recommended such a procedure, he details the history of the patient, as follows:

The patient was a primipara; the head was fully expelled from the pelvis, but enveloped by the soft parts like a cap; the vulva, a small opening situated at the upper and

anterior part of the tumor, was in striking contrast to the size of the head which was to pass through it; under the pressure of severe pains, the perineum became so thinned and distended, without any relaxation of the opening, that it seemed impossible for a complete rupture to be avoided. And thus hours were passed, using lubrications and hot fomentations, supporting the head and drawing it forward, fearing a rupture every moment, until finally, with great difficulty and much suffering, the patient was safely delivered.

Case of Complicated Twin-labor.

EDWARD W. THURSTON, F.R.C.P., London, M.R.C.S., Eng., reports in the *British Medical Journal*, Oct. 12th, 1867, p. 312, the following case:

Mrs. S. A——, primipara, aged 27, consulted me in the sixth month of her pregnancy for œdema of the lower extremities. This was relieved for the time; but, at the commencement of the seventh month, became very excessive, accompanied with considerable dyspnoea; and, toward the end of the month, the œdema and dyspnoea had increased so much, that I was debating with myself the advisability of inducing premature labor, when, on January 24th, at 8 P.M., I was sent for and found her in labor. The os uteri, on examination, was found soft and dilatable; the pains were short and quick, and of a spasmodic character. The presentation at first was rather obscure. As apparently so much was to be felt, I was certain of a breech; but I thought I felt something behind it resembling a vertex; but it was high up and difficult to ascertain exactly in this early stage. The pains continued; the membranes ruptured; and, on examining afterwards, the breech was found well down. The os uteri dilated rapidly; no other presentation could then be detected. After a short time, the right leg, followed by the remainder of the lower part of the body, was born, and then our troubles commenced. The pains throughout had been very feeble, but at this point ceased altogether. Fearing that the child would soon be sacrificed if delivery was not effected, I administered a good dose of ergot, but with no effect, and then applied a certain amount of traction; but no advance took place. I was then afraid, considering the ease with which the body of the child had been born, that there must be some mechanical obstruction; and, upon introducing my hand, I discovered a second head occupying the hollow of the sacrum. It was also just possible to introduce the finger into the mouth of the one that was partly born, the head of which was above the pubes.

Before attempting anything, I sought my partner's advice and assistance. He confirmed the diagnosis. By this time the first child was dead; so our chief endeavor was, if possible, to secure the live birth of the second. Attempts were made to push the head up, but without the least effect. The patient being in an extremely weak state, from her previous two months' suffering, combined with a feeble constitution, a speedy delivery was above all things indicated. This, we decided, was only to be accomplished by removing the obstruction; so craniotomy upon the second child was determined upon; this I did, and then, notwithstanding I completely emptied the contents of the skull, it required considerable force to extract the first child. Up to this time there had been little or no uterine action; but almost directly the first child was born, the second followed; the placenta was shortly afterwards removed. The uterus contracted well; the patient rallied; there was very little hemorrhage; and she was left for the night on the whole feeling quite comfortable.

The next morning all appeared well, with the exception of her having passed a sleepless night; pulse 80; no pain. At 11 P.M., however, I was sent for suddenly, and found her suffering from urgent dyspnoea, with distressing pain in the region of the heart. I admin-

istered a full dose of opium combined with ammonia, and placed a blister at the seat of pain, ordering the opiate to be repeated every four hours till relief was obtained. The next morning the dyspnoea was better, but still she had had no sleep; and, in the evening, after having given opium during the day without the least composing effect, I determined upon trying the subcutaneous injection of morphia, and injected one-third of a grain. This had the effect of producing five hours' sleep; but it did not arrest the tendency to syncope, which again returned the following evening. It was then so severe, and of such long duration, and the sensation of approaching dissolution was so acute, that I was watching for her last breath. Death appearing imminent, I abstained from inflicting any apparently useless pain, and omitted the injection. To our great surprise, next morning, our patient was still alive, but had had no sleep. Stimulants, combined with eggs and milk and ammonia and digitalis, had been given at intervals from the first; these were continued during the day, and at nine P.M., after a good dose of brandy and water swallowed *guttatim*, I injected into the lumbar region half a grain of morphia in solution. The patient was asleep in ten minutes; and, with the exception of waking at intervals during the night for a few minutes (when, by my direction, a little brandy was always administered), eleven hours of almost uninterrupted sleep were obtained.

The same treatment was adopted every night for a fortnight with the same result; and the patient has gradually recovered, and on February 17th she came down stairs. The dyspnoea returned each night for more than a week; but the attack became gradually less acute.

The sequel of this interesting case tells me, that if the shock to the system at the time of delivery had been increased in any way, however small, she must have died. As it was, the heart's action was as nearly arrested as possible. The only way in which delivery could have been effected differently, would have been by severing the neck of the first child, and passing the head up into the abdomen. This was discussed at the time; but, considering that the children were barely viable, that the mother was in such a feeble condition, that if it had been unsuccessful it would further have complicated an already sufficiently complicated case, besides the shock to mother and friends by the infant being beheaded, I think that the plan that was adopted was the only feasible one in the case before us.

Retention of Skeleton of Dead Fœtus in Utero for Four Years.

Dr. A. HOLLEY reported to the Obstetrical Society of London, June 5th, 1867 (*British Medical Journal*, August 10th, 1867, p. 118), the following particulars of the retention in utero of the greater portion of the skeleton of a dead fœtus for four years:

Mrs. E. H——, aged 35, always had good general health up to the time of her marriage, six years ago, with the exception of suffering from some dysmenorrhœa and occasional leucorrhœa. Three months after marriage she miscarried, and suffered from more or less uterine hemorrhage, about every fortnight, for four or five months afterwards. In November, 1860, she again became pregnant, and suffered from a constant discharge for six weeks; she quickened in March, 1861, and was delivered of a dead child in July. She became pregnant for the third time in May, 1862; quickened in August, and over-fatiguing herself at that time in the Exhibition, a discharge occurred, which continued for about a month, when the membrane gave way, and fleshy masses and offensive discharges came away daily for two months more, bones occasionally passing. She now suffered for some two months from a slight discharge, but had no return of the catamenia. The discharges were occasionally offensive, and sometimes portions of bones were passed;

this at last ceasing for several months. In May, 1863, she consulted Dr. Churchill, of Dublin, who considered that she had probably passed all that had to pass; but in two or three months more a rib came away, with much offensive discharge, which continued up to the time of her coming under the author's care, in February, 1866. She had had slight shivering on one or two occasions before passing the bones, but otherwise her health had been good. On digital examination the uterus was found large, anteverted, with shortened neck; the os slightly open; the whole giving the idea that there was some abnormal substance within. On March 9th Dr. Hall Davis saw her, in consultation with Dr. Halley, and injected some warm water into the uterus, which, however, brought away only stringy shreds, with coagula of blood, and the conclusion arrived at was, that without fully dilating the os, nothing could be done.

She subsequently returned home, to the north of Ireland, and again consulted Dr. Churchill, who approved of the proposed plan of dilating the os and exploring the uterine cavity. She then came back to London, to place herself under the care of Dr. Halley and Dr. Hall Davis. On May 10th, 1866, chloroform was administered, and a laminaria tent introduced and left in for twenty-four hours, a sponge tent being then substituted for twelve hours. The os being then tolerably open, Dr. Davis removed, with a pair of long dressing forceps, fifty-nine pieces of bone, the accompanying discharge being very offensive. On the following day twenty-seven additional pieces were removed, and one came away subsequently, making a total of eighty-seven. Each of the three manipulations took from two to three hours, during which she was kept under chloroform. Since the operation she had gone on perfectly well in every particular, the discharge had ceased, and menstruation was regular.

The Nature and Treatment of Puerperal Convulsions.

ARTHUR R. STEELE, Esq., Lecturer on Midwifery, Liverpool Royal Infirmary School of Medicine, says, in the *British Medical Journal* for August 17th, 1867, p. 125:

First—as to general depletion by bloodletting—we have the highest authority for copious venesection as an essential part of the treatment of puerperal convulsions; and of its good effects under certain circumstances I can add my own testimony from observation. But, then, by others of equal repute—M. Trousseau, for example—we are forbidden to have recourse to the lancet in this affection. How can such opposite views of treatment be reconciled? The solution of the difficulty consists in a consideration of the pathology of the disease. Without going minutely into the subject, it may be sufficient to state the well-known fact, that puerperal convulsions may arise from two distinct and opposite conditions of the system—one in which excessive distension of the vessels of the brain or spinal cord, or both, produces eclampsia by compression; the other, in which, from excessive loss of blood from hemorrhage, natural or artificial, the nervous centres are drained of their blood, giving rise to convulsions from anæmia, as was first pointed out by Dr. Marshall Hall. Thus we see that bleeding in the one case is remedial, by relieving the oppressed nervous centres, and restoring the balance of the circulation; while, in the other, it only increases the evil—"the therapeutics of the disease," as tersely put by Dr. Tyler Smith, "trenching distinctly upon its pathology." (*Journal of Obstetrics*, p. 499.)

Such, in brief, is the principle by which we are to be guided in the matter of bleeding in this disease. My own experience induces me to believe that, notwithstanding the high authority of M. Trousseau, cases of puerperal convulsions are sometimes met with, in which early and copious venesection is an essential element in their successful treatment.

I am unable to appreciate the principle upon which local bleeding can be useful, except, possibly, to relieve the secondary effects of continued pressure upon the brain from a long continuance of the paroxysms, which would, I think, be more effectually *prevented* by the relief afforded in the earlier stage by reducing the quantity and force of the general circulation by venesection.

The foregoing apparently simple and conclusive statement of the question, however satisfactorily it may dispose of the difficulty in deciding when to bleed and when to stimulate, does not, unfortunately, apply to a wide range of cases, in which the state of the circulation in the nervous centres is not the main cause of the convulsions; in many of which it may be, as M. Trousseau states, the effect of eclampsia; and in others it may not exist to such an extent as to become a subject of material consideration in the treatment.

Besides plethora, and its opposite condition, anæmia, we have other centric causes of convulsions, which may exist either with or without the first two conditions. Such are the various forms of toxæmia depending upon those agencies which interfere with the proper depuration of the blood, as constipation, and insufficient secretion from the bowels caused by mechanical pressure of the gravid uterus upon the intestines; cholæmia from insufficient action of the liver, or uræmia from affection of the kidneys. In addition to all these, we have the eccentric causes of convulsions, such as emotion, irritation of the uterus and the uterine passages; and, again, irritation through the medium of more distant incident excitator nerves, as irritation of the bowels, especially the lower part of the intestinal canal, from the presence of indurated fæces, worms, or the severe action of purgative medicines, all of which have been known to produce convulsions. Gastric irritation, and even irritation of the mammæ, caused by excessive soreness of the nipple, with mammary induration, have been the cause of convulsions.

The indications for treatment in these varied conditions are too obvious to require comment; and, under such circumstances, either depletion or stimulation, if indicated at all, can only be regarded as subsidiary or secondary measures. Next to bloodletting, the most vexed question is that relating to the propriety of artificial delivery. In forming a conclusion upon this point, we must still be guided by the pathological conditions present, and their relations to the convulsions as causes. When there is reason to believe, from the absence of any other source of irritation, that the presence of the fœtus in the uterus is the exciting cause of eclampsia, delivery by the speediest method, and that least likely to add to the irritation already existing, is the manifest indication. The propriety of emptying the uterus must entirely depend upon the peculiar circumstances in each case. If the convulsions depend upon causes evidently independent of direct uterine irritation, delivery will, I believe, usually (and I speak from observation on this point) produce no impression whatever upon the course of the disease. I have frequently found the paroxysms to continue unabated for some hours after delivery has been completed.

With reference to the mode of effecting delivery, the rule must be to adopt the means least calculated to increase irritation to the uterus; and certainly I cannot but think that the forceps, on that account, should always be preferred whenever their application is practicable. The passing up of the small blades of the forceps through the vagina (and os uteri, when necessary) is far less calculated to produce irritation of the incident excitator nerves of the parturient canal than the introduction of the hand and arm in the operation of turning, or the more complicated manual operations involved in craniotomy. Wherever the forceps can be applied, their use need not be, in skilful hands, more dangerous, and, in the circumstances under consideration, I believe they would be as safe, or safer, than any other method of artificial delivery.

In conclusion, I would observe that the treatment of puerperal convulsions must, like

that of almost every other disease, be founded on a system of pure eclecticism. The object is, if possible, to trace the effects to their causes, and to remove those causes in the most efficient manner. I am well aware that by many the sole origin of puerperal convulsions is thought to be uræmia, as the result of excess of albumen in the urine. This, no doubt, is a very frequent, perhaps the most frequent, cause; but I am not convinced that it is the invariable cause. I also know that practitioners of much ability and experience rely chiefly, if not entirely, upon chloroform as the remedy—perhaps I may venture to say the specific—for this affection. I have had no opportunity of personal observation in the treatment of puerperal convulsions by chloroform; but I can well understand that, in many cases, it must be most useful in rendering the nervous system less susceptible of the exciting causes of eclampsia; and, from the evidence we have in its favor, it is impossible to doubt its efficacy; nor is its judicious employment at all irreconcilable with the principles I have endeavored to lay down as a guide to the treatment of this formidable malady.

Hour-glass Contraction of the Uterus Simulated by the Pressure of a Narrow Binder.

In the *British Medical Journal* (September 7th, 1867, p. 206), WM. T. GREEN, M.D., Physician to the Moida Dispensary, reports the following case:

On the 5th of June last, I was called in to see Mrs. E. L., who had given birth to her first child on the previous evening at 10 P.M., after a natural and not very protracted labor; but who, although fourteen hours had elapsed since the termination of the second stage, had not yet been delivered of the placenta.

On my arrival at the house, I found the patient, a middle-sized healthy young woman, of about 25 years of age, in a state of abject terror, and much exhausted. Her attendant, an ignorant old woman, had tied the end of the funis that protruded externally to the foot of the bed, in order "to prevent its going back." The unfortunate patient had also been directed to keep "quiet;" and, following the nurse's injunction to the letter, had not ventured to stir, even to empty her bladder, of which she stood in urgent need. There had been some post-partum hemorrhage, though not to any great extent. A vaginal examination told me that the placenta was retained in the uterus; but, before attempting its removal, I proceeded to examine the abdomen externally, and found a very narrow binder, tightly applied below the uterus, which was much enlarged, but not tender. Thinking that I had discovered the cause of the retention of the after-birth, I immediately loosened the binder, when an enormous clot escaped, and, in a minute or two, the long-retained placenta. Good contraction followed, and the patient recovered without any bad symptom.

In this case, the narrow binder originally applied, or which had slipped below the uterus after the birth of the child, had prevented the escape of the remaining contents of that organ, simulating that rather unusual complication of child-birth, hour-glass contraction of the uterus.

Extra-uterine Fœtation.

CHARLES TERRY, Esq., of Newport, Pognell, reports in the *British Medical Journal* for September 21st, 1867, p. 248, the following case:

I was sent for in March, 1867, to see Mrs. W., who, I was told, was suffering from a violent attack of diarrhœa of long standing. On reaching her house, I found that she

had been confined four months before; and one month afterwards she had been seized with violent purging, attended with pain in the left hypogastric region, which was but very little increased by pressure. The motions were entirely liquid, very offensive, and voided constantly day and night. This state of things had continued for three months before my seeing her. The patient was extremely emaciated, and presented the appearance of one suffering from phthisis; but auscultation and percussion gave no certain signs of its presence. The other organs of the body were healthy.

I administered aperients; but under this plan the motions became more offensive, and she became very low, nervous, and depressed. I then, though I must confess with misgiving, gave astringents; but still the diarrhoea very little abated, the motions became *horribly offensive*, and the pain increased. I left off astringing, convinced that it was evidently locking up some unknown source of irritation. The diarrhoea might have been accounted for in various ways; but I was certainly at a loss to account for the appearance of the motions, which resembled nothing I had ever seen before, and were of a whitish purulent appearance, smelling strongly of putrefying matter.

I now simply devoted myself to keeping up the patient's strength; but, notwithstanding all the means adopted, the symptoms of prostration gained ground, the diarrhoea still continued much the same, and pectoriloquy was audible in both lungs. In the early part of June, a bone was passed with the motions, which, on examination, proved to be the femur of a foetus. It had no apophyses; and the foramina for the medullary vessels were well marked. This threw light upon the case; and I made out the following history:

My patient informed me she was confined with her first child in 1858, a natural labor. Two years after this, she entertained no doubt that she was again pregnant; and she went, as she thought, her full time, the whole of the period being marked by great pain in the chest and bowels. She was unable to move about, and was constantly obliged to be propped up; and lying on her back caused pain and a sense of weight. At the end of her time, she passed without any pain what, according to her, resembled a mass of congealed blood, followed by a considerable discharge of liquid blood. After this, she decreased gradually in size; and, notwithstanding her friends considered her pregnancy must have been a delusion, she never entertained any doubt herself but that she had been really pregnant. She recovered her health, and suffered no further pain. In two years more, she again became pregnant, and was delivered, at the full time, of a child, having had a short labor, with little pain. Eighteen months after this, whilst still suckling, she was attacked by great pain in the stomach and left hypogastric region; and shortly afterwards passed, *per rectum*, about a pint of blood, when the pain ceased, and she soon recovered. Four years after this, she was again confined; and a month after this the present history commenced.

On examining the patient after this statement, in conjunction with my friend Mr. Hailey, a sensation of a hard movable body was communicated to the finger in the left hypogastric region, close to the descending colon; and it seemed clear that a considerable portion of the foetus remained in the sac communicating with the bowel. The patient's state was such as utterly to preclude the idea of any operation. About six weeks from this time, at the wish of her friends, she was taken to London (no more bones having passed); and death put an end to her sufferings about three weeks after her removal.

Shortly before death, a large mass of bones was passed *per rectum*. Amongst them was the inferior maxillary bone, which gave great pain in its passage, and had to be removed with the fingers.

The relations unfortunately appear to have objected to an autopsy, which would have been of a most interesting character; but I think there can be no doubt that an exami-

nation would have shown a communication between the sac containing the foetus and the descending colon; and this was, in all probability, established after the discharge of blood *per rectum*. No special symptoms appear to have been experienced between this period and her last confinement, the pains of which would appear to have pressed some portion of the foetus into the bowel through the opening. The efforts of nature to do this, and the exhaustion caused thereby, appear to have been the sole cause of death, as otherwise there seemed no reason why the foetus should not have remained in the abdominal cavity for a great length of time, as in the case published in the *Journal* a short time ago by my friend Mr. Watkins of Towcester.

The Indications for Manual Interference and other Agencies in the Treatment of Abortions.

Dr. SAMUEL LANDWITH, F.R.C.P., of London, read a lecture on this subject, with cases in illustration, at the General Meeting of the East York and North Lincoln Branch. (*British Medical Journal*, July 13th, 1867, p. 21.)

Labor terminating in Expulsion of Hydatids.

EDWARD CROSSMAN, Esq., of Hambrook, England, reports, in the *British Medical Journal* for July 13th, 1867, p. 24, a case of pregnancy and labor at full time, terminating in the expulsion of a large mass of spurious hydatids. At about the beginning of the fifth month, a slight hemorrhage commenced and persisted for more than a month. During the labor, a considerable quantity of blood was lost, but the patient went through the usual routine of a lying-in. Mr. Crossman says:

I made a careful examination of the substance expelled. It filled a chamber-pot and a half. So far as I could ascertain, there was little or no fluid discharged from the uterus. I could find nothing representing foetus or placenta, but several large masses of solid half-organized coagulum, and pieces of tough white membrane. The bulk of the mass was made up of transparent vesicles, varying in size from one-eighth of an inch to an inch and a half in diameter, and these were arranged in lines and clusters, like bunches of grapes, and were attached to the pieces of membrane and coagula.

Obstetrical Instruments, Modern and Ancient.

In the *British Medical Journal* for June 22d, 1867, p. 736, and for June 29th, 1867, p. 770, there is a review of the "Catalogue and Report of Obstetrical and other Instruments, exhibited at the Conversazione of the Obstetrical Society of London, held by permission at the Royal College of Physicians, March 28th, 1866. With numerous illustrations." Pp. 229. London, 1866.

The accuracy and minuteness of the report of each instrument or class of instruments exhibited, is such that the work will doubtless be appealed to on disputed points for many years to come; it will furnish landmarks or starting-points for further advances in the science. The catalogue is an alphabetical one, and there are 213 wood-cuts. It contains the pith and cream of this remarkable collection of instruments used in midwifery, and in treating the diseases of women.

G. H. N.

Changes in the Shape of the Fœtal Head Produced by Labor.

Dr. J. G. SWAYNE, physician-accoucheur to the British General Hospital and lecturer on midwifery at the Bristol Medical School, in an article on this subject, in the *British Medical Journal*, for June 29th, 1867, p. 768, remarks upon the wisdom of this provision of nature and says :

In a paper which I communicated to this Branch some years ago, I laid great stress on this point, and showed how favorably it operated in lessening the difficulty of what are called occipito-posterior positions of the head. In ordinary head-presentations, considerable alteration takes place in the shape of the head in all cases where it has been subjected to much pressure and the labor has been much retarded ; nor is this alteration of shape usually incompatible with the safety of the child. The shape of the head becomes elongated ; for, as Dr. Tyler Smith remarks, "as a general rule, it may be laid down that, in ordinary presentations, the longer the head remains in the pelvis, the more ovoid will it become, always provided that the pelvis is not absolutely deformed." M. Baudeloque has noticed at some length all these changes ; and his description is so accurate, that I may quote it at length. He says : "The head, pushed forward for hours together by the natural agents of delivery, becomes insensibly softer and more pliable, and at length acquires the necessary dispositions for moulding itself to the form of the pelvis. If it then flattens in one direction, it really lengthens in another ; the *form* of the cranium only changes, and its cavity contracts so little that the brain is scarcely affected by it. I have taken children whose heads seemed to have lost nine or ten lines of their natural thickness in passing the superior strait, and seemed to have lengthened in the same proportion without comprehending the tumor formed on the scalp before the posterior fontanelle. The heads of several of these children were above six inches and a half and even seven inches long, from the chin to the top of the aforesaid tumor ; while the thickness from one parietal protuberance to the other was but two inches and a half, or two and three-quarters in some, and three inches in others. In a few hours after birth, the heads of these children spontaneously recovered the thickness which they had lost in delivery, and lost the length which they had acquired by it." M. Baudeloque then adds in a note : "M. Solayres informed us one day in his lectures that he had taken a child the evening before whose head, at the moment of birth, was eight inches long all but two lines, measured between the points indicated above ; while it had preserved but two inches, five or six lines in thickness. The day after, the head had recovered its usual dimensions."

In the *Obstetrical Transactions* for last year, there is an interesting paper on this subject by Dr. Robert Barnes, containing measurements of heads which had been much altered in shape by difficult labor. Dr. Barnes states that the deformation of the head is threefold ; viz. : 1. Elongation or conification ; 2. A symmetrical flattening of one side ; 3. Twisting of the conified portion upon its axis. He states also that, as a general rule, "the part of the fœtus which presents in the axis of the brim, which has to lead the way, so to speak, for the rest of the head, undergoes more or less bulging out or elongation." From a number of very accurate measurements, Dr. Barnes draws the following conclusions :

1. The ordinary dimensions of a standard head at term, not deformed by labor, are :

	Inches.
Fronto-occipital diameter,	4½ to 5
Occipito-mental,	5½ to 5¾
Greatest transverse (between parietal tubercles),	3½ to 4
Lesser transverse diameter (between the ears),	3½

2. In protracted labor, with vertex presentation, in a pelvis normal or nearly normal, the above dimensions are altered to:

	Inches.
Fronto-occipital diameter,	5½ to 6
Occipito-mental,	6½ to 6¾

The greatest transverse diameter is often merged in the lesser; that is, the parietal bones are compressed so that the interparietal diameter becomes the same as the interauricular, which is fixed.

3. In a case of tedious labor, with the head in the third position of Naegelé, the elongation was greatest in the bregmato-mental diameter; i. e., the elongation more nearly approached the vertical diameter of the head than the longitudinal diameter.

4. Elongation of the head is due sometimes entirely, and often greatly, to the pressure the head experiences in passing a rigid, imperfectly dilated cervix uteri. Hence the conical elongation is most marked in primiparæ. Hence, also, one reason why the forceps is so much more frequently called for in first labors.

5. In turning, in contracted pelvis from projecting promontory, the transverse flattening of the head is much exaggerated; in extreme cases, the moulding capacity of the cranial bones being exhausted, space is gained by indentation or even fracture of the bone in contact with the promontory: the lateral or transverse compression is compensated by slight mento-occipital elongation—i. e., this diameter increases a quarter or half an inch, and also by fronto-occipital elongation.

In occipito-anterior positions of the head, the usual tendency, as mentioned above, is to elongate the head in the direction of the occipito-mental diameter, or rather a diameter a little in front of this. The elongation is most marked, and most exactly corresponds to the occipito-mental diameter, in the occipital variety of head-presentation, or that variety in which the posterior fontanelle presents, instead of the ordinary presentation of the posterior superior angle of the right parietal bone. This variety of presentation is recognized by the smaller bulk of the presenting part, by the finger impinging on the overlapping angles of three bones, and also frequently by the circumstance that the accoucheur can readily reach both ears and the nape of the child's neck behind the pubes.

In the occipito-posterior positions of the head, when the usual turn is not effected, and the forehead continues throughout the labor behind the pubes, the shape of the head becomes very much modified if the labor be protracted, and varies very much from what we usually see in the ordinary vertex presentations. When the head is expelled with the forehead behind the pubis, the occipito-frontal diameter, instead of the trachelo-bregmatic diameter, is in relation with the antero-posterior diameter of the pelvic outlet. The result of this is, that the occipito-frontal diameter, instead of being lengthened as it usually is, becomes much shorter, and the transverse diameter of the cranium is increased; but the greatest increase is effected in the mento-bregmatic diameter of the head, which very nearly corresponds to the axis of the pelvic outlet. Thus the head, as viewed from above, becomes very much rounded in shape. This modification has a very favorable effect on the progress of these labors. The distension of the perineum, which in these labors would be increased to a very dangerous degree, becomes much relieved, and the mechanical disadvantages resulting from this position of the head are greatly lessened,—in fact, so much so that instrumental assistance is but seldom required.

In face-presentations, a great alteration takes place in the shape of the presenting part, producing the disfigurement so well known in these cases; but this is the result of œdema from pressure, rather than from any displacement of the bones of the face, the articulations of which are not of such a nature as to admit of the moulding process like that

which takes place in cranial presentations. This is one reason, perhaps, why labor is more difficult in face-presentations, although the actual diameters of the face are not greater than those presented by the cranium in ordinary labors. In brow-presentations, which are intermediate between those of the face and those of the vertex, the alteration of shape caused by the moulding process is sometimes very peculiar and startling. This was very marked in a case I once saw with the late Mr. Leonard. I found, on my arrival, the forehead presenting, with the head so firmly fixed in the pelvis that it was impossible to pass the finger sufficiently high to reach the chin, or in any way to alter the position of the head. We, therefore, allowed the labor to go on naturally, as the head was forced perceptibly lower by each pain. At last the forehead presented at the os externum, the root of the nose being pressed against the subpubic ligament, and the anterior fontanelle against the border of the perineum. The nose now remained stationary in that position, forming, as it were, the centre of the semicircle described by the rest of the head; whilst more and more of the vertex protruded with each pain. At last the whole was expelled,—the vertex first, and then the face. The child was still-born,—in consequence, no doubt, of the extreme pressure on the anterior part of the head, as the forehead was enormously swollen, and the whole face much distorted.

The tendency of the labor in cases like that just described is to produce shortening more especially of the occipito-mental diameter, which is in apposition with one of the oblique diameters of the pelvis; and lengthening of the trachelo-frontal diameter, which corresponds to the axis of the pelvic outlet. The shape of the head is thus altered in a very unusual manner; and, during this process, so much pressure is exerted upon it in the neighborhood of the great fontanelle, that the child's life is apt to be endangered. This, then, is another reason for endeavoring to alter presentations of the brow, in addition to the inherent difficulties attending labor with the head in so untoward a position.

Induction of Labor a Second Time in a Woman with a Deformed Spine and Pelvis.

Dr. JOHN ARMSTRONG, of Gravesend, narrates a case of induced premature labor, with the results, in the *British Medical Journal*, June 8th, 1867, p. 662:

A gum-elastic catheter was introduced, with some difficulty. After it was passed up four or five inches, the stilette was withdrawn, and the instrument passed up quite eight inches and allowed to remain twenty-four hours. On withdrawing it, the membranes were detached from the cervix and os by passing it, with the finger, round the cervix, while about four inches of the catheter were in the uterus. The woman was nearly eight months gone, and both mother and child did excellently well.

Penetrating and Lacerated Wound of the Abdomen and Uterus of a Pregnant Woman, with Escape of a Living Child through the Wound.

Dr. E. J. MARSH, Assistant Surgeon U. S. A., reports the following remarkable case in *The Medical Record*, of New York, June 1st, 1867, p. 148:

On the evening of April 5th, 1867, Mrs. F——, æt. 42, the mother of eight children, and then in the eighth month of pregnancy, was struck in the abdomen by the horn of an enraged cow. The horn did not tear through her clothes, but she felt the child drop out, caught it in her dress, and took a few steps homeward. Here she was met by a neighbor,

who assisted her to the house, distant about twelve yards from the place of accident. With this assistance, Mrs. F—— walked to the house, and then sat down, but the neighbors soon laid her on the floor. Her friends, up to this time, supposed that the child had come *per vias naturales*; but when they lifted up the clothes they found the bowels protruding, and “reaching to the feet,” as one of them stated. They cut the umbilical cord, removed the child, endeavored to replace the bowels as far as possible, covered them with a clean cloth, and left her in this condition until my arrival.

I arrived at the house about three-quarters of an hour after the accident, and found the woman lying on the floor, extremely prostrated, pale, and with a rapid and barely perceptible pulse. There was a considerable, but not excessive amount of blood, soaked into her clothes, and on the next morning blood was found on the ground where the accident occurred, and thence to the house.

I removed her to a mattress, and, on examination, found several feet of intestine and the uterus lying exposed, protruding through a wound of the abdominal wall. The womb was partially inverted through a wound in itself, and the placenta was still attached to the surface of the inverted portion. The wall of the abdomen was torn for about five inches, the wound extending from the umbilicus outward and somewhat downward on the left side, in an almost straight line. I returned the intestines, removed the placenta, and replaced the uterus. This organ was considerably lacerated, the wound being Y-shaped, but with one leg shorter than the other. In the contracted state, the wound was between two and three inches in length. There was but slight uterine hemorrhage on the removal of the placenta. I then united the wound with sutures and plaster, and put on a broad bandage. She was entirely conscious, complained little of pain, but was very restless, throwing her arms about and rolling about the bed. I had given her constantly, from my arrival, small quantities of brandy and water, but she did not, in the least, rally from the shock. The pulse soon became imperceptible, and in about an hour and a half from the reception of the injury, she died.

The child was a boy, was not injured in any way, and is still living.

WEST POINT, N. Y., April 18th, 1867.

Post-Partum Hemorrhage Treated by Ether Spray.

JOHN BROADBENT, M.R.C.S., &c., of Manchester, England, gives, in the *British Medical Journal* of June 8th, 1867, p. 662, the details of a case of post-partum hemorrhage successfully treated by ether spray to the hypogastric region, after the usual remedies,—ergot, cold napkins to the vulva, &c., and the introduction of the hand into the uterus,—had failed.

Persulphate of Iron in Post-Partum Hemorrhage.

Prof. G. MENDENHALL gives the following experience with this hæmostatic, in the *Cincinnati Lancet and Observer*, Oct., 1867:

Mrs. M——, aged 24 years, seven and a half months advanced in her second pregnancy, was taken in labor on the night of the 7th of September. I saw her at 5 o'clock on the morning of the 8th. The child's head was pressing on the perineum, the pains feeble and occurring at intervals of about five minutes. There was some discharge of blood from the vagina,—perhaps six or eight ounces in all, previous to delivery. In the course of two hours (after changing her position to the back), the uterine contraction became more active, and after a few pains the child was expelled in a feeble condition.

Along with the expulsion of the child came a considerable quantity of coagulated blood. The uterus contracted feebly, just sufficient to settle down in contact with the placenta, but not to expel it. The hemorrhage continued with some rapidity, and I assisted in the removal of the after-birth by pressure on the fundus of the uterus and pressing the placenta gently with the forefinger of the right hand on that portion in the vagina and neck of the uterus. In this way it was soon delivered entire. The uterus was small and very soft, and manipulation with it had no perceptible effect in producing firm contractions or arresting the hemorrhage. I then introduced a piece of ice into the vagina and into the cavity of the uterus, which was repeated several times with little or no abatement in the hemorrhage. The patient soon became restless, the pulse feeble, and the respiration irregular. I procured as quickly as possible four ounces of *Monseil's saturated solution of persulphate of iron*; and the best syringe I could get in the hurry of the moment was a straight glass female syringe of uniform dimensions, holding about one and a half ounces. This was charged with the solution and introduced into the uterus as high as it could be passed and then emptied of its contents. It was withdrawn, re-charged, and again introduced as high as possible, but not to the same extent as at first, and again discharged into the uterus. The hemorrhage immediately ceased, the pulse slowly regained its strength, and in a short time the patient was again comfortable. Not a drop of red blood made its appearance externally for about forty-eight hours, when the lochia gradually appeared, with at first slight tinges of coloring matter, increasing in quantity and in the red appearance usual in cases of delivery. I have used this remedy four times in extreme cases of post-partum hemorrhage successfully in stopping the discharge promptly. In one case the hemorrhage returned on the second or third day. It was again arrested promptly, but reappeared in about thirty hours, and finally the patient sank from exhaustion. A hemorrhagic diathesis evidently existed in this case, which resisted all the means used in checking the discharge. In all the other cases the arrestation of the hemorrhage was prompt, complete, and permanent. The remedy is safe, and produces little or no pain at the time. Severe after-pains sometimes occur from the presence of hard clots in the uterus, which are difficult of expulsion; but these pains may soon be relieved by an opiate, as in other cases, until they are expelled. When this remedy is used, the uterus should be emptied as completely as possible of blood, either by the hand or injections of water, so as to allow it to come in contact with the uterine walls. Should the uterus contain much blood the solution will mix with it and not come in contact with the bleeding vessels, and, of course, its powerful astringent effect on the vital tissues will be lost. The detention of the injection in the organ for a time would add to its certainty of effect. In making the application, I prefer the introduction of one hand into the vagina, and partly into the uterus, and passing an elastic catheter along the palm into the body and fundus, then placing the nozzle of the syringe in the end of the catheter, and passing the injection through it. In one case, a hard rubber straight female syringe was used, and succeeded very well, while in the present case the glass instrument of similar shape answered very well. The size of the syringe in these cases prevented the rapid escape of the solution, which can, however, be better controlled by the position of the hand in the vagina and uterus, when the catheter is carried up. The use of the glass syringe is not free from liability to accidents from breakage.

We have in the persulphate a very safe and almost certain remedy in cases of post-partum hemorrhage, if properly applied, and the uterus thoroughly emptied previously to its use.

Case of Inversion of the Uterus.

G. F. HODGSON, Esq., of Brighton, reports in the *British Medical Journal* for August 24th, 1867, p. 149, a case in which inversion of the womb was caused by the nurse pulling violently at the funis (the placenta being adherent to the fundus), favored by the very flaccid and patent condition of the os uteri.

Re-inversion was accomplished by taxis, and the patient recovered.

PART II.—DISEASES OF WOMEN.

Physiology and Pathology of the Female Organs of Generation.

Under this head in the *Prager Vierteljahrschrift*, an article is written by Dr. HILDEBRANDT, the object of which is to prove that the rotation which the foetal head undergoes in normal labor, viz., the turning of the occiput from the lateral walls of the pelvis to the symphysis pubis, depended neither on the form of the pelvis, nor on the rotation of the shoulders (as C. Braun, Hohl, and Cr  d   believe), but is produced by the resistance which the fibres of the levator ani oppose to the occiput during its propulsion through the lower part of the pelvis. The following observations are intended to furnish proof of this proposition: 1. We find that the head of a small premature f  tus undergoes the same rotation in a pelvis of normal dimensions, which a mature f  tus performs, and that heads of normal size, in pelves abnormally large, are subject to the same laws of rotation. This correspondence of phenomena under such different conditions renders it probable that the causes which produce this so-called second rotation must lie in the soft tissues within the cavity.

2. In every physiological labor we have opportunity of convincing ourselves, that the head is propelled toward the strait of the pelvis exactly in the same position which it assumed at the brim, with the sagittal suture in the transverse or oblique diameter. Only after its passage through the middle portion of the pelvis does the mentioned rotation commence; but its different progress is influenced by the circumstance whether the labor occurs in a primipara or in a subject that has given birth to several children. In the latter the rotation frequently takes place so suddenly that the act is accomplished with a single pain. In the primipara, on the contrary, it proceeds usually much more slowly, with much greater pains, and commonly in an interrupted manner, so that the occiput turns toward the symphysis during the acme of the pain, but recedes more or less during the intermission. This phenomenon is not explicable by the old theory: that the rotation depends on the diminution of the transverse and the simultaneous increase of the antero-posterior diameter, but on a gradual overcoming of the resistance presented to the head on the anterior and lateral wall of the pelvis. As this resistance shows itself differently in the primipara, as it is greater and must be overcome more gradually as the cessation of pains causes the head to recede in a measure to its previous position, this resistance must be of an elastic nature, and inhere the soft parts of the interior of the pelvis. Although the vagina is capable of enormous distension, it cannot produce this effect with the small amount of elasticity and contractility it possesses. This resistance results from the levator ani muscle, which, spreading out flatly in the pelvis, and strengthened by the

pelvic fascia, forms a kind of diaphragm with a slit, wide in front and diminishing toward the rectum. In this slit the head must pass in its passage through the pelvis. In primipara the resistance of the muscle and fascia is greater, hence the rotation is slower, and is accomplished by a more gradual yielding of their tense fibres. In women who have borne several children these parts have become much more relaxed and yielding, through the previous distension they have undergone; hence the rotation of the occiput anteriorly is often so very sudden in these cases.

Not only in the process of labor does this muscle exert so much influence, but it possesses almost equal importance in the treatment of the various changes of form and position of the uterus and vagina. Most of these morbid conditions demand for their cure the use of pessaries, in order to rectify the abnormal positions. The supporting media of these instruments are supposed to be located either in the tuberosities of the ischium or in the vagina itself. The tubera are too far apart to furnish any support, being four inches distant from each other, while the pessary hardly possesses so large a diameter. Careful examination proves that a proper pessary never rests on the tuberosities, but is placed higher up, and that a pessary which distends the vagina to the extent of or beyond four inches cannot be borne. Nor are the spinæ ischii concerned in the support of the pessary, as they also stand too far apart. The distended walls of the vagina cannot fix the instrument, because the smooth and slippery surface of the walls would allow it to slide and fall out. Hildebrandt thinks that the support is furnished, with few exceptions, by the levator ani, because it is extended through the middle of the pelvis like an elastic diaphragm, and surrounds the vagina, excepting its anterior wall, thereby presenting points of support on which the pessary can rest. When a gutta-percha ring is placed in the middle of the vaginal canal, we can convince ourselves, that the lower border of the ring rests on the muscular fibres of the levator ani, stretched right and left across the cavity of the pelvis. If the ring is placed lower, it will invariably slide downward from the vagina; if it is introduced higher up, as far as practicable, and if the walls possess any elasticity and tension, it will drop immediately down to the point directly above the levator; where the walls are lax, a pressure of the abdominal muscles will produce the same effect. If the pessary employed by Simpson for anteversion of the womb is retained for weeks and months without changing its position, though deprived of every artificial support, this fact is readily explained by an accurate examination of the place on which the globular body of the instrument rests—this will be found to be the bundle of muscular fibres spread transversely before the rectum, the posterior semicircular part of the levator ani. This explains also the well-known fact that the intra-uterine pessary of Simpson is very useful in anteversion, but perfectly useless in retroversion of the womb, because the instrument finds no support in front, and drops out very easily. Hence those pessaries are the best which are most adapted to receive the support of the levator ani. The ring-like pessary possesses this construction, and is superior to the elliptic pessaries. Of most service would be the horseshoe-shaped pessary, if its ends were not apt to injure the walls of the vagina.

In simple prolapse Hildebrandt employs the gutta percha ring of Mayer, and the round ring made of tow, and covered with India-rubber. If the vaginal canal is very long in a case of prolapse, Hildebrandt makes use of two rings, of which the smaller is placed above the larger. Where the walls of the vagina are very lax he prefers pessaries which find their support outside of the vagina in a belt fastened around the pelvis. Among all the pessaries used in connection with a belt, that of Simpson, modified by Breslau, is the most approved, while all the others, even those used by Kiwisch, Roser, and Scanzoni occasion, almost without exception, irritation of the bladder and bleeding. For the treatment of uterine flexions only two forms have proved serviceable: the straight-probed

pessary (with a rod projecting from a disk) for anteversion; the spring-pessary, a contrivance originating from Simpson, for retroversion. The spring-pessary rests with every part of its elliptic ring except the anterior portion on the levator ani muscle.

The simple regulator for anteversion, as has been observed, is supported by the part of the muscle which lies in front of the wall of the rectum. In selecting intra-uterine pessaries in particular cases, the spring-regulator must be chosen with reference to the length of the uterine cavity, the size and tension of the vagina, and the resisting force of the levator ani, in order to determine the length of the spring rod and the size of the ring. In anteversion the spring must not be too long; it should not touch the fundus of the uterus, yet extend far enough beyond the flexed portion of the organ; again it must be equally thick throughout its extent, because in this form it is least apt to slip out of the womb; finally, the disk on which the spring is fixed must be thick enough to fill up the space between the os externum of the vaginal portion and the posterior bundle of the levator ani which supports it. The average extent of this cavity corresponds with a sphere of about 6" in diameter. Since the vaginal portion of one female necessarily differs in extent from that of another, producing a greater distance between the external orifice and the muscle, it is clear why in many cases the simple regulators with the smooth disk or sphere will be suitable, while those thicker ones of Simpson will cause undue pressure; why both will at times require an artificial support to give them a firm position in the vagina. For this reason it is necessary to have on hand various forms of pessaries for anteversion, not only in regard to the length of the spring or rod, but also with reference to the height and thickness of the body, and these differences are represented between 1½" and 7". Hildebrandt employs exclusively two kinds of intra-uterine pessaries for anteversion; one is made of hard India-rubber, and consists of a rod or straight pin resting on a flattened ball. The thickness of the pin in its entire length is 1—1½", its length from 2" to 2" 6"; the transverse diameter of the ball 9"—1", its thickness 1½"—7". This pessary is easily introduced, either along the sound or after its removal. Hildebrandt uses also pessaries of which the pin is made of lead, to avoid the irritation resulting from an inflexible body in high degrees of anteversion, and, moreover, to exert a medical influence on the superficial ulcers and tumefaction of the mucous membrane, which closes up the cervical canal,—an effect which is analogous to that produced by lead bougies in strictures of the male urethra.

Ovariectomy.

Seven cases of ovariectomy performed in the City Hospital of Farskoe-Selo, during the summer of 1866, are briefly reported by Krassowski (*Petersburg Medical Journal*, 1866–67). Of these 7 cases, 6 recovered and 1 died. In 2 cases, both ovaries were removed. In the case that died, a small fibroid tumor attached to the fundus of the uterus by a thin pedicle, was removed by ligature (Köberlé's *Serre-nœud*), and the hemorrhage immediately checked by the hot iron. The patient died on the seventh day after the operation with general peritonitis.

The autopsy revealed recently formed connective tissue on the cauterized localities; the remainder of the pedicle presented the appearance of mother-of-pearl stria; the uterus was neither inflamed nor hyperæmic. In all cases existed a colloid degeneration; 4 cases were complicated with adhesions, which were broken with the finger or the hot iron; in 2 cases a considerable piece of omentum was removed. The method of operation was in each case that of Baker Brown; once only arterial hemorrhage occurred from the pedicle, which was checked by the actual cautery. Krassowski prefers the bandage of Köberlé. In his clinic in the Imperial Medico-Chirurgical Academy of St. Peters-

burg, 8 cases of ovariectomy occurred, of which 2 were double, 3 recovered, and 5 died. Another observation of 2 cases of ovariectomy reports 1 recovery and 1 death 36 hours after the operation. Of the superiority of the actual cautery, as a means of detaching the pedicle, over the other methods, the following facts will serve to furnish the proof: (a) The results: Baker Brown lost but 3 cases out of 32 operations; Krassowski lost only 1 out of 7. (b) Masslowski's careful experiments demonstrated that the eschar on the cornua of the uterus did not slough, but became isolated by a capsule of connective tissue forming adhesions with the surrounding tissues. (c) The mentioned specimen of a uterus after the removal of a fibroid tumor.

Here follow some general statistics collected on the subject of ovariectomy, the result of the two different methods of Clay and Wells, viz.: the small incision and the extra-peritoneal, and the intra-peritoneal methods; the preference Wells gives to the clamps, and Clay to the ligature, etc., which are drawn from the *Lancet*, 1865, February, March, and are probably known to most readers.

The Intra-uterine Pessary as a Hæmostatic.

Dr. J. HERTZ considers this subject in the *Monatsschrift für Geburtskunde*, August, 1867. He thinks it is yet an open question how far a mechanical treatment is admissible in cases of flexed uterus. He gives the case of a young married woman who suffered from flexion and anteversion of the uterus shortly after her first confinement. She was confined on the 17th of September, 1865, and did well for some two weeks. She was then troubled with hemorrhage, for which the doctor was again called on the 25th of October, and on examination he found the cause to be antelexion and anteversion. The ordinary means of arresting hemorrhage, ice-cold injections, with astringents, and the tampon, proved unavailing. As the patient was sinking from loss of blood, the doctor determined to elevate the uterus to its proper position, and then follow the sound with an intra-uterine pessary to keep the uterus in its place. The sound was introduced with some difficulty on the 30th. The pessary was easily introduced alongside of it over the point of flexion.

The hemorrhage was almost instantly arrested, and no pains followed.

November 2d. There was slight hemorrhage with colicky pains. From this time not a drop was lost, and no further pain was felt in the generative organs.

November 10th. The pessary was removed on account of pain in the bowels and mucous discharge from the uterus. Examination reveals that the antelexion has been converted into anteversion. Cold injections were then given, and after a few days a ring pessary was introduced, which was worn until February, when the recovery was complete. At present the woman is again three months advanced in pregnancy. The conclusions drawn from this case differ from those of Martin, who thinks that the sound should never be introduced under six weeks after delivery. In this case it is remarkable that no inflammatory symptoms followed, nor was the introduction of the sound much more difficult than usual.

The Employment of the Faminaria Digitata to induce Premature Labor.

Prof. GUSTAV BRAUN, in the *Wiener Med. Wochenschrift*, July 17th, 1867, states that he used the faminaria in several cases with ill success. The great trouble appears to be, that it very frequently slips out of the uterus into the vagina before any dilatation has

been produced. Another objection to the *faminaria*, according to Braun, is the unequal expansibility of the material. Good specimens of the *faminaria* should be of a uniform sea-green color and nearly transparent, but in commerce we frequently find them of yellowish-red or dirty yellow color. This sort always breaks easily, and possesses but little expansive power; for these reasons he usually gives the preference to compressed sponge for hæmostatic purposes. The same objections hold good against its reliability in cases of induction of premature labor.

Solution of Neutral Chloride of Iron as a Hæmostatic.

Prof. BRAUN, in the same journal, for July 13th, 1867, strongly recommends the preceding as a hæmostatic in various uterine diseases. A very great obstacle to the employment of the ordinary solution is its acidity. The free chlorohydric acid being a solvent of coagulated blood, tended to defeat the very object for which the solution was applied. Not only this, it is an irritant to the mucous membrane. To obviate these difficulties, Prof. Braun employs a neutral solution, made by adding carbonate of soda to the ordinary acid solution, whereby the solution is not only rendered neutral, but by decomposition common salt is formed, which possesses slight hæmostatic properties. To neutralize an ounce of liquor ferri about 4 grs. of carbonate of soda are needed. The preparation, when diluted with water, should give a slight haze without precipitating oxide of iron. It should have a light-brown color, and become opaque on being shaken.

Prof. Braun has found it peculiarly efficacious in cases of fetid discharge from the uterus. In 20 cases it gave better satisfaction than either chlorine water or a solution of the permanganate of potash.

Chronic Metritis.

Professor SCANZONI (quoted by the *Journal of Practical Medicine and Surgery*), of Würzburg, has never obtained any good effects from anything but the iodide of potassium, and the iodo-chloride of mercury in direct application to the uterine and vaginal mucous membranes.

He uses, for instance, a liniment containing one drachm of iodide of potassium to one ounce of glycerine, and places every night in the vagina a sponge impregnated with this fluid. The sponge is removed in the morning. This, he says, is the only method of iodine dressing which has ever been found capable of reducing, in the course of two or three weeks, the size and induration of the inferior segment of the womb, and is infinitely preferable to the application of tincture of iodine and of iodized liniments to the inguinal regions.

Scanzoni has more recently had recourse in the same manner to the introduction into the vagina of the following pomade:

Hydrarg. iodo-chloridi,	.	.	.	.	.	.	.	gr. v.
Adipis,	.	.	.	.	.	.	.	ʒj.

After each application of the remedy which requires the assistance of the speculum, the patient should keep her bed for six or eight hours.

The sponge may then be extracted, and an injection of tepid water should be performed. The epithelium is in general destroyed in the parts which have come into contact with the ointment; exudation follows, and marked decrease of size of cervix. The application may be repeated several times, if necessary, at intervals of ten days or a fortnight.

Scanzoni has completely relinquished the practice of applying tincture of iodine to the

vagina or cervix. When excoriations are present, he prefers, to all other local remedies, rectified *pyroligneous acid*, pure or mixed with equal parts of creasote. He leaves these modifiers in contact with the ulcerated surfaces until the sanguineous oozing has ceased, and until the part, which is in general of a bright red, has acquired a dead white color.

Dysmenorrhœa.

Dr. R. E. BLAND, in a paper read before the St. Louis Medical Society, calls the attention of the profession to the connection of the rheumatic diathesis with some forms of dysmenorrhœa (*St. Louis Medical Reporter*, July 15th, 1867, p. 289). He says:

I have often observed a parallel in the action of rheumatic inflammation upon the muscular and tendinous expansions, and the agony that is experienced in that most singular and painful affection denominated dysmenorrhœa. The motion of a muscle affected by rheumatic inflammation causes most insufferable pain. So, when the uterus is thrown into abnormal action by the peculiar state set up at the menstrual period, who can say the signs of active congestion, recognized in the redness of tissue, the enlargement of the cervix and os tincæ, the tearing agony of the uterine contractions, and the expulsion of the membranous exudations, are not the result of the rheumatic diathesis?

The parallel is also to be seen in the fact that rheumatism is periodical, pursuing its course with great distress and pain to the patient, then suddenly vanishing, leaving but little, if any, trace behind. So with dysmenorrhœa, especially of the inflammatory type. It makes its advent suddenly, runs its course with great infliction of pain, then as suddenly subsides, leaving the patient comparatively comfortable.

The parallel holds good in another aspect. Rheumatism frequently makes its attacks, and the patient suffers greatly, when the signs of inflammation are absent. There is no swelling, no redness; all the patient knows of the disease is the pain she suffers. It is so with some of the forms of dysmenorrhœa. The action may be violent, the pseudo-membranous exudations may be thrown off, and yet the patient is apparently well in the interval, and, so far as the speculum reveals the facts, the signs of inflammation are absent. In either case the disease may be justly termed neuralgic rheumatism or neuralgic dysmenorrhœa.

In most of the cases of dysmenorrhœa that have come under my observation, the parts being brought into the field of vision by the use of the speculum vaginæ, have been of the inflammatory type. This was to be told in the violence of the symptoms, by the engorgement and redness of the cervix and os tincæ, by the force and excitement of muscular action, by the expulsion of membranous exudations, and by the tenderness upon touch.

The rheumatic forms of the disease may be distinguished from those that are not by an enlargement and hardness of the cervix and os tincæ. The cases just mentioned are to be distinguished from those that are the opposite in pathological aspect. In the latter the os tincæ is soft, sponge-like, and when the finger is applied it appears to come against a soft and elastic substance.

These cases are not rheumatic, as may be known in the constitutional conditions to be observed in each. In the former are the signs of active inflammation. The speculum reveals redness, enlargement, and hardness, with tenderness of the cervix and os. The latter, on the contrary, presents the signs of anæmia; face and surface of the body pale, general languor, no tenderness, or but little, either in the exploration of the vagina or the neck and mouth of the womb.

I have resorted to the use of colchicum in its various forms and combinations—the root of colchicum, the vinous tincture, the acetated extract of colchicum. These I have combined with the preparations of potassa—the iodide, the acetate, the citrate, and the bromide. I have used all these combinations with the colchicum, particularly the vinous tincture from the seeds, and the acetated extract of colchicum. These remedies, and their vinous combinations, I have used with very great advantage in the rheumatic forms of dysmenorrhœa, or rather in what I supposed to be such.

The following may be used with great advantage in the acute or inflammatory form of this distressing disease :

R. Acet. colchici extr.,	. . . . .	ʒj.
Acet. pot.,		
Iodide pot.,	. . . . .	ʒʒ ʒij.
Vin. colchici (sem.),	. . . . .	f. ʒj.
Liquor opii sed.,	. . . . .	gtt. xl. M.

Take twenty drops every three hours to reduce pain. As soon as pain is relieved, then twenty drops three times a day, to be dropped and resumed as soon as the constitutional effects are more or less seen. Or, when other tried remedies fail, the following may be resorted to, with good effects :

R. Pulv. camphoræ,	. . . . .	ʒj.
Pulv. Doveri,		
Sulph. quin.,	. . . . .	ʒʒ ʒj.
Rad. colchici,	. . . . .	ʒss.
M. Ft. massa ; divide into pills, No. 60.		

Take one every three hours, until the constitutional effects of the colchicum are felt, then protract the intervals as circumstances may demand.

Pelvic Cellulitis.

In the *British Medical Journal* for August 3d, 1867, p. 85, there are given the details of a case of pelvic cellulitis occurring at the St. Bartholomew's Hospital, under the care of Dr. GREENHALGH, the chief point of interest in which, consists in the pointing of the abscess below instead of above Poupart's ligament ; a most unusual circumstance.

Renal Tumor Mistaken for Ovarian Cyst.

The Paris correspondent of the *British Medical Journal*, July 27th, 1867, p. 70, states that at the last meeting of the French Academy, Professor BÉHIER showed a very large renal tumor, discovered at the autopsy of a woman, aged 64, who was always thought to be suffering from an ovarian cyst, and had undergone two punctures. She died from erysipelas of the face. M. Béhier deduces from this case the necessity of not practising ovariectomy without having exercised the greatest circumspection.

Case of Extreme Anteversion of the Uterus Cured by the Application of a Bag of Sand on the Hypogastrium.

The following notes of a case of anteversion of the uterus, were furnished by Mr. H. JARVIS, resident accoucheur at St. Bartholomew's Hospital, to the *British Medical Journal* for July 6th, 1867, p. 7 :

Maria Tethnar, aged 38, single and always been well up to November last, when she

took cold whilst bathing. The catamenia since became very irregular and profuse. She suffered severely in the lower part of the back and in the abdomen, and from incontinence of urine, retaining it only fifteen minutes at most. On November 10th, 1866, Dr. Greenhalgh introduced a straight silver stem, with relief to the pain, the incontinence continuing. The stem was expelled after five days. On December 15th, a curved stem was introduced, and retained fifteen days, with the same result. At the end of January, 1867, she was admitted as an in-patient. A bag of sand, weighing three-fourths of a pound, was placed over the bladder; and she was desired to retain her urine each day a few minutes longer than the previous one, if possible, which she did. She gradually improved; and by the end of March the uterus was in its normal position, and she could retain her urine from six to eight hours.

Epileptiform Neuralgia during the Puerperal Period; Epileptic Seizures; Phlegmastia Dolens.

C. J. EVANS, Esq., of Northampton, relates (*British Medical Journal*, July 6th, 1867, p. 5) a case presenting this association of diseases in a married woman, aged 22, after the delivery of her second child.

Menorrhagia Treated by Hot Water Bags.

Dr. CHAPMAN gives, in the *Medical Mirror* (London), the following cases illustrative of his favorite treatment:

CASE 1. A. B., aged thirty-five, housemaid, has suffered from profuse and prolonged menstruation during several years. She has a heavy, sickly, and weary look, and has been obliged to leave several "places" on account of her general debility, and difficulty of carrying things up stairs. The menstrual discharge often lasts ten or twelve days, and is accompanied with great pain in the back, and a "sinking in the stomach." She says her back "feels as if it were coming to pieces." She finds some relief by pressure against it, and therefore places a pillow beneath it at night, and often sleeps with her arm beneath it. The discharge is so copious, that she is generally obliged to use about thirty thick napkins. She has been treated by a variety of medicines, and by mustard poultices applied along the spine until the back became very sore. At her menstrual period preceding the one in question, she became so ill, and was so weakened, that she was ordered, by her ordinary medical attendant, to leave her work, and give herself up to rest during a fortnight.

Having resumed her duties, she again became "unwell" early in the morning of November 1st, 1866, as profusely as usual. In the evening of that day, or about eighteen hours after menstruation recurred, an eight-inch, doubled-columned spine-bag, containing water at 120° F. (the bag having been warmed before the water was put in, so as not to lower its temperature), was applied along the lower third of the spine, and was kept on till the water became cool. The result of the first application was such wonderfully rapid and great relief to the patient's back, that she said, "I feel as if I were in heaven." The flow was meanwhile restrained to a very great extent. During her whole menstrual period, the bag was applied seven times, and each time remained on until it had become cool. The flow had quite ceased at the end of the fifth day, and had been so lessened in quantity, that but little more blood was lost during the four days after the treatment began, than was lost during the previous eighteen hours. Moreover, the patient found herself generally very much better and very much stronger than during her previous periods. She said she felt as if she had got a new back; and as a proof of her unusual

strength, she adduced the fact that, whereas generally during her periods she is obliged to ask one of her fellow-servants to perform one of her duties for her, viz., that of carrying water up stairs to her master's room in the morning, because she feels as if she should faint in attempting to do so, and did on one occasion re-establish the flow by doing so, on this occasion she carried the water herself with ease. She also found that, whereas during her former periods, bending the body forward and backward caused great pain, she could, during her present period, rapidly do so without producing any pain at all.

Extraordinary Fecundity.

We would record, says the *Messenger du Midi*, a remarkable case of fecundity at Pierrelongue (Drôme):

A woman by the name of Coste, belonging to a poor peasant family, was lately delivered of three daughters in excellent health. Fifteen months before, she had given to the world two girls,—twins,—and she was already then the mother of two children, likewise females. . . . This is an exceptional phenomenon in the general statistics of births. (*Gazette Méd. de Paris*, Oct. 26th, 1867.)

Statistics of Menstruation in Germany, in the Northern and Central Portions.

M. MAYER, of Berlin, offered statistical tables, comprising 6000 observations made from 1853 to 1866 on German women. The average age of first menstruation was 15.84 and 15.19, among 3000 women of the upper class; and 16.50 among the poorer. This age was 15.98 among 4939 women of the city, and 15.20 among 1061 women of the country. This order may yet again be changed, by a subdivision of the poor and the rich in city and country. Thus it is with figures that M. Mayer determines successively the relative questions of influence of latitude and longitude, the medium temperature of the year, altitude, complexion, the stature, the constitution, fecundity, the intervals of menstrual epochs, their duration, their abundance, the age of the menstrual cessation, etc., etc. (*International Med. Congress. Gazette Hebdomadaire*, Aug. 30th, 1867.)

Menorrhagia Caused by Subinvolution of the Uterus after Delivery.

MONTROSE A. PALLAN, M.D., read before the St. Louis Medical Society, a paper on Menorrhagia, in which he says (*St. Louis Medical Reporter*, June 15th, 1867, p. 225):

The uterus, after delivery at full term, is estimated to weigh about one pound and a half. The multiparous uterus weighs about an ounce, and if conception, gestation and delivery have taken place, and involution has gone on properly, the uterus has a weight of about twelve drachms. The process of returning back to its size is called *involution*. This is effected by a fatty degeneration of the muscular fibres. The whole organ becomes soft; the fibre cells are easily broken, and are filled with oily particles. The muscular fibres thus disintegrated are removed by absorption. The mammary glands removing a portion, which, it is supposed, is converted into caseous matter of the milk; the kidneys removing another portion, as oily particles are visible in the urine, and the mucous membrane of the uterus getting rid of another part in the lochial discharge.

The complete involution of the uterus requires from two to three months. If from any cause this is arrested, menorrhagia is apt to ensue. This has been noticed by Sir James

Y. Simpson. When an arrest of involution occurs the uterus remains enlarged, the blood-vessels which percolate the tissues are enlarged, and there is also a veritable congestion of the mucous lining of the organ. This condition produces a hemorrhage.

Why is it that involution is arrested? Doubtlessly this may arise in many cases from inflammation supervening after parturition; but the most frequent cause is the too early assumption of the erect position after confinement; whether in merely sitting up in bed or getting up and standing on the feet.

For several days after labor there is no involution at all, the bloodvessels are yet enlarged, and will be distended from gravity if the female sits or stands up. Such distension of the vessels prevents the contraction of the muscular fibres, and it is the contraction which produce involutions.

He says, in regard to the use of injections into the uterus: I have to remark that when the internal os is well dilated, sufficiently so as to permit the introduction of the index finger, then there rarely, if ever, supervenes the uterine colic. Once, and once only, have I ever witnessed this distressing malady, and that was because I had failed to dilate with a sponge tent; but, when such precautions were taken, I have not hesitated, in numerous instances, to inject tinct. iodine, solution of sesquichloride of iron, tannin and glycerine, equal parts, and the various solutions of sulphate of zinc, from six to forty grains to the ounce of water, and the same may be quite safely done when there have supervened the usual dilatations subsequent to miscarriage or abortion followed by hemorrhages. As to peritonitis ever following such injections, by the passage of the fluid through the Fallopian tubes, I very much doubt, and from their anatomical relations, regard such results as very problematical.

PART III.—DISEASES OF CHILDREN.

Convulsions in Utero.

Dr. JAMES WHITEHEAD, of Manchester, England, communicates to the *British Medical Journal* for July 27th, 1867, p. 59, the following statements:

On March 25th, 1867, Mrs. D., in the ninth month of her second pregnancy, was seized, at 6 P.M., with severe abdominal pain of paroxysmal character, recurring at intervals of three to five minutes. Each attack was attended with an inclination to down-forcing effort, and hence appeared to indicate the near approach of labor.

I saw her two hours after the first seizure, and learned that the paroxysms had steadily increased in severity and duration from the onset. For two or three minutes after my arrival, the patient was tranquil and half-dozing, the uterine tumefaction presenting its natural roundness and uniformity; but, while in the act of carrying the flat hand over the abdominal surface, a sudden shock of the system took place, followed immediately by the elevation of a tumor of the size of a fist on the left side of the umbilicus, very sensitive under slight pressure, and alternately increasing and diminishing slightly in bulk and tension. The throes were of an irregularly pulsating character; and the tumor, under the gentle grasp of the hand, felt as if caused by a succession of violent spasmodic plunges of a foot of the fœtus against this part of the uterine wall. Sometimes I thought I could define the outlines of the foot as if imbedded in the oval-shaped tumor. After the commencement of a paroxysm, the plunges, each one being succeeded by a very perceptible quivering motion, were repeated in rapid succession, once every four or five seconds during

the first half-minute, then somewhat less frequently during the next half minute, after which they diminished in force and frequency, and ceased about the end of the second minute, the local tumor at the same time subsiding, and merging itself in the general uniform rotundity of the abdomen, as it had appeared during the preceding interval of quiescence.

The patient, on the subsidence of the paroxysm, was greatly exhausted, drowsy, and disposed to slumber. Her skin was bathed in cold perspiration; the breathing was slow, with occasionally deep sobbing; the circulation was languid; pulse 64, small and feeble.

The lower section of the uterus, now examined for the first time, could be felt above the brim of the pelvis, but not protruding within it. The uterine orifice was not dilated nor dilatable; the cervix, though short, was still tubular and unoccupied. The foetal head could be felt through the uterine walls on each side, but its exact position was not clearly definable. The foetal pulsations were remarkably distinct stethoscopically, numbering 164 per minute during the interval of quiescence, the maternal pulse numbering at the same time 64.

At the end of four or five minutes, the patient having dozed during the interim, another attack came on with like severity as the preceding, the plunges being equally strong, rapid, and quivering, each attended by an involuntary scream, with general muscular shock throughout the frame. The foetal head, now slightly pressed into the brim of the pelvis, the cervix uteri being unaltered, was felt through the uterine walls to be rapidly rotating from side to side, the sagittal suture passing over the finger twenty or thirty times during a single paroxysm; the rotations, quick at first like the plunges, gradually becoming less frequent, and ceasing with the discontinuance of the plunges and subsidence of the local tumor.

With the stethoscope on the abdomen during the latter part of the next quiescent interval and until the arrival of another attack, I was enabled to notice that, in the seizure which followed, the foetal heart's action became immediately accelerated, rising in frequency from about 164 to upwards of 180, being sometimes uncountable; the maternal pulse at the same time lessening in volume, and sinking from 64 to below 60. These varying movements of the two circulatory systems of mother and foetus respectively, maintained their relative changes throughout the more violent prevalence of the paroxysms, the disparity decreasing with the waning severity and frequency of the seizures.

The attack lasted five hours—from 6 to 11 P.M. Gradually aggravated from 6 to 8, the commotions seemed to be most severe from 8.30 to 9.30; after which time, probably from the effects of remedies administered, they perceptibly abated, and at 11 ceased altogether.

Chloroform, in moderate doses, had already been given by inhalation before my arrival, and had been effectual in mitigating the suffering; but it is probable the subsidence of the convulsions was mainly due to the effect of anodynes administered to the mother, and conveyed through that medium to the foetus. At 8 o'clock, thirty minims of nepenthe (a remedy she was known to bear with comfort and relief) were administered, followed by chloroform, to tranquil slumber, which was maintained half an hour. She was allowed to awake at 8.30, when another dose of thirty minims was given, followed again by chloroform. After this, a similar dose of the anodyne was repeated every half-hour to the sixth dose at 10.30; each dose being followed by chloroform until this hour, when the anæsthetic seemed to be no longer required, the convulsive movements having much diminished in force and frequency. At 11 o'clock, when the foetal movements seemed to have lost their convulsive character, the patient fell into a deep tranquil sleep. On the following day 11 A.M., the foetal pulsations numbered 140 per minute, the maternal pulse being

68. Twenty-four hours after, the fetal pulse was 136, that of the mother still 68. From this date the patient remained free from irregular intra-uterine movements, though greatly enfeebled, until delivery, April 15th, twenty-one days after the intra-uterine paroxysm. The child was delivered with forceps. The head was unusually large, firmly ossified. No convulsive tendency has been manifested by the child since birth, thirty-five days.

Treatment of Empyema in Children.

Dr. THOMAS HILLIER, F.R.C.P., Physician to the Hospital for Sick Children and to the Skin Department of University College Hospital, writes upon the subject of empyema in children to the *British Medical Journal* for August 3d, 1867, p. 80 :

Pleurisy is a much commoner disease of children than would be supposed from reading the ordinary treatises on children's diseases. Its presence is often overlooked; the symptoms are referred to "infantile remittent," to "congestion of the brain," or to "disordered liver," and, if it become chronic, to phthisis or atrophy. Pain is either not complained of at all, or else it is referred to the abdomen, or shows itself in a general tenderness of the body; hence the chest is not examined. When a physical examination of the thorax is made, from the frequent absence of friction and the presence of bronchial breathing, with the difficulty of getting much information from the voice in young children, the case is often mistaken for inflammation of the lung or tubercular consolidation.

Idiopathic pleurisy is not at all rare in children; pleurisy, secondary to tubercle, to pneumonia, or to renal disease, is equally common, or even more so. Pleuritic effusion in children, even when idiopathic, has a great tendency to become purulent at a very early period. When pus exists in the pleura, as a general rule, the sooner recourse is had to paracentesis the better. Even when the effusion is not purulent, if the pleura is much distended, and dyspnoea is increasing, in spite of diuretics and counterirritation, it is inadvisable to postpone the operation. If the empyema be of very long standing, and the dyspnoea be not great, and rather on the decrease, it is better to leave the case to nature; and the purulent collection will probably excite no irritation, and its fluid portion may be absorbed. In one case of this kind, in a boy five years old, where the disease was of three years' standing, I operated with the patient's chest under water. The lung, which had been long collapsed, was atrophied; a communication was established between the bronchi and the pleural cavity; this caused decomposition of the contents of the pleura, and the patient died in a fortnight of irritative fever.

Of seventeen cases of empyema of which I have notes, in six there were spontaneous openings or pointing of matter requiring operation; of these, five recovered with permanent fistula; the other died, after fourteen months, with necrosis of the sternum and amyloid degeneration of the viscera. In eleven cases, paracentesis was performed; of these, six recovered completely, one had a permanent fistula, and four died. Of the four fatal cases, one was a child only five months old, who died of collapse of the lung; one was twelve months old, and died of pneumonia; one was the child whose case I referred to just now; and another died of septicæmia, whose case will be reported presently.

I believe it is of great importance to prevent the entrance of air into the pleura. I once put the patient into a warm bath, and opened the chest under water. The result in this case has been above mentioned, but was not due to the mode of operation. In some cases I have evacuated the contents of the chest by means of a long, narrow, elastic tube, whose free end opened under water. Unless air is admitted, and if the lung does not expand very readily, the contents of the cavity are but very partially evacuated. To promote more complete evacuation, the employment of an exhausting syringe, as recommended

by Dr. Bowditch (*American Journal of Medical Sciences*, vol. xx, October, 1850, p. 325; and Gairdner's *Clinical Medicine*, pp. 380 and 718), is of great service.

Of the last six cases in my wards at the Children's Hospital, in which this syringe has been used, five recovered, and only one died. This was a child, twelve months old, who died of pneumonia. He had been previously leeches on his head at a London hospital, and, when admitted, was extremely anæmic and exhausted. These results are probably more favorable than one can usually expect to meet with. Of Bowditch's cases, in twenty-six the fluid was serous, and twenty-one recovered; in twenty-four it was purulent—of these, eight recovered, nine were relieved, and seven died.

Dr. Hillier then gives a detailed account of his successful cases and comes to the

Conclusions.—Paracentesis thoracis is not a dangerous operation in children; if performed early, the chances of a favorable result are very great. The cavity should be evacuated as completely as possible without the admission of air, and then closed. If the contents of the cavity become fetid, a counter-opening should be made, and a drainage-tube introduced, as recommended by Chassaignac and Dr. Goodfellow. Injections of iodine tend to diminish fetor, but have no effect in promoting the closure of the cavity. Change of air, nutritious food, and tonics, are the main agents in favoring recovery. Very great deformity of the chest from contraction after pleurisy in children may be completely removed if the lung have not been too long disabled by compression.

Case of Spina Bifida (Hydrorachis), treated successfully by Ioditized Injections, by Dr. Sézerie.

An infant, aged nine and a half months, was attacked by a paraplegia and by an incomplete paralysis of the superior members. A tumor occupied the inferior portion of the lumbar region as large as an orange, diminishing sensibly in volume by compression. It opened twice spontaneously. On the 12th of March, 1859, M. Sézerie "punctured it with a hydrocele trocar, and evacuated it of 30 grammes of citron-colored liquid; then, while an assistant compressed the base of the sac, he injected into it about 30 grammes of a mixture of the tinct. ioduret iodii, and of water, in equal parts. He allowed the solution to remain in for three minutes, and then let it almost entirely flow out. The tumor never reproduced; the incomplete paralysis of the superior member soon closed; the paraplegia too diminished, little by little, so much so that to-day, two years and more after the operation, the child can walk, run, etc. It only has, as a remain, an incontinence of urine."—*Dr. Bournville's Critical Review in Le Mouvement Médical*, October 20th, 1867.

Artificial Milk.

M. GIBOUST, at a meeting of the Academy of Medicine, Paris, July 3d, points out the unsuitableness of the "artificial milk" of Liebig as a diet for children. He tried it with four children, all of whom died under its use. M. Giboust adds: "We have a natural product which more nearly resembles human milk than does a mixture of cow's milk, flour, malt, lactate, and butyrate of potash. It is cow's milk itself. On an average, human milk contains a little more water, more sugar of milk, less butter and casein than cow's milk. Thus, by taking the latter, and adding a little sugar, and a fifth of its weight of water, we have an aliment at the disposal of everybody, forming a better substitute for human milk than any artificial compound."

M. Giboust is entirely right regarding the unsuitableness of Liebig's "artificial milk"

for young infants. It is fit only for children of larger growth, as it but little resembles human milk; and we consider it both injurious and indigestible by infants. M. Giboust is, however, himself in error in supposing that the compound he recommends resembles human milk. In human milk the butter is 20.75 to 1000 parts; the casein about 14.40. In cow's milk, the butter is 38.50 in 1000 parts, and the casein about 40.50. In human milk as 100 to 70; in cow's milk as 100 to 105. Dilution will not change these proportions; and we should expect to find the child suffering for the want of the necessary butter. But if cow's milk is allowed to stand for four or five hours, and the upper third then skimmed off (or, better still, the lower two-thirds drawn off with a syphon), and diluted with about $1\frac{1}{2}$ parts of water and a little sugar, we have a milk very nearly resembling human milk, being of about the following composition:

Butter,	.	.	.	.	20.77
Casein,	.	.	.	.	14.61
Sugar,	.	.	.	.	75.00
Water,	.	.	.	.	889.62
					<hr/>
					1000.00

PERCY.

Extra-uterine Foetation and Gestation, etc.

Among the papers published in the *Transactions of the American Medical Association*, for 1867, is one with the above title, by Dr. STEPHEN ROGERS, of New York. It gives a pretty full *résumé* of the history of the subject, with some new cases not hitherto published. The main points to which Dr. Rogers calls attention are, *first*, the importance of an early and certain diagnosis, and, *secondly*, the propriety of operative interference, with the view of saving the life of the woman. Regarding the former, he suggests that in case there is any doubt of hemorrhage into the peritoneal cavity, a trocar should be inserted,—a simple and almost perfectly innocent measure, by which the presence of blood in the peritoneal cavity can be demonstrated, or its absence proved. As to operative interference in case of rupture and hemorrhage, *i. e.*, gastrotomy, the extraction of the foetus, and ligation of the bleeding vessels, Dr. Rogers presents strong arguments in favor, contrary to the teaching of most authors.

Decapitation in Cases of Transverse Presentation.

Dr. EMIL MEISSNER reports in the *Wiener Med. Wochenschrift*, July 24th, 1867, that out of 8500 cases presenting themselves at the clinic of Prof. Spaeth for obstetrical attendance, the operation of decapitation was twice performed. In both cases the internal os was so constricted that turning was impracticable. In one case it was found necessary to crush the head with the cephalotribe before it could be extracted. In the remaining case, the head was extracted, without much difficulty, by the forceps. Both cases made a good recovery.

SURGERY.

I. GENERAL SURGERY.

Treatment of Primary Cancer.

In an article on "Clinical Studies of Cancer" (*British Medical Journal*, June 1st, 1867, p. 627), CHARLES H. MOORE, F.R.C.S., Surgeon to the Middlesex and St. Luke's Hospitals, London, says, that great as he deems the error of treating primary cancers by the injection of acetic acid, it is small in comparison with the delusive trifling with them which occurs in the practice of certain persons, and especially in homœopathy. There is among persons affected with this disease, a surprisingly inflexible confidence in irregular ways. "There is no power in any treatment to cure a disease of this nature, and the attempt to do so beyond its early and doubtful stage, demands a hardy conscience." The diminution of a cancerous tumor which sometimes follows an improvement of the general health, is not merely due to the removal of essential constituents of the tumor, but to the absorption of contained fluid and dispersion of surrounding œdema. "Such temporary and partial reduction of a cancerous tumor affords no justification for pursuing inadequate treatment, when the nature of the disease has been recognized, and the tumor may be otherwise removed." Several cases are then detailed of reckless dallying with growing cancerous tumors, resulting in a serious increase of the extent and risk of the inevitable operation, through the fatal, unseen dissemination of cancer into adjoining healthy structures.

Cancer Treated by Injection with Acetic Acid.

In a report of cases of cancer, treated at the Cancer Hospital by Dr. Broadbent's method of injection with acetic acid, Mr. WEEDEN COOKE, of London (*British Medical Journal*, June 1st, 1867, p. 630), gives the result of four cases of scirrhus of the breast, one of epithelioma of the rectum, and two of epithelioma of the cheek, treated in this way with one part of acid to three of water. In no case was there any beneficial result; in some there was an aggravation of the disease produced.

Malignant Tumor in Connection with the Kidney.

J. INGHAM IKIN, Esq., F.R.C.S., of Leeds, states (*British Medical Journal*, June 8th, 1867), that he removed at a post-mortem examination, from the body of a girl 18 years of age, a large tumor intimately connected with the left kidney, weighing four pounds. Its length was nine inches, circumference fifteen and a half.

In this case, no other organ of the body was found diseased; the right kidney was healthy.

A word as to the history of the case. The patient was sent to the hospital from Ripon, and no decided medical opinion had been given on her case, as it was considered a very

unusual one. Though the girl was scarcely 18 years of age, she had all the appearance of a little fat woman. The breasts were large; the mons veneris was covered with hair, and the organs of generation quite developed. Her complexion was very ruddy, and, to a casual observer, she looked the picture of a healthy little fat woman. She, however, complained of pain in her back and limbs. Still, after remaining about six weeks in the hospital, no decided opinion could be given as to the precise nature of her disease. Indeed, some of my medical friends who saw the case considered it merely a case of premature development, precocity, and obesity. Luckily, she was not discharged, but retained in the hospital under observation, assisting a little in the wards, and enjoying all her meals, &c. By degrees, decided symptoms of disease of the kidneys manifested themselves. What had been taken for general stoutness, now assumed a decidedly dropsical character, general œdema. The urine was deficient in quantity, but still not unhealthy, not containing any foreign constituents. The skin became dry, and unduly livid; indeed, the complexion assumed a most curious appearance, being of a purplish-red hue, like that of a confirmed gin-drinker. As an enlargement in the region of the left kidney could be distinctly felt, I imagined it was either scrofulous enlargement, or an adipose state of that organ, pressing on the bloodvessels, and thus producing the curious congested state of the skin. There was no *bruit* heard over the region of the tumor, nor pulsation felt. When Dr. Deville and myself first examined the specimen, we thought it might be an aneurism; and, with this idea, it was sent to Dr. Brinton, who pronounced it to be a malignant tumor. I think the case is quite as singular and "unique" as that of Dr. Foster, reported on by Dr. Greenhow, and is worthy of record.

The case of Dr. Foster, reported on by Dr. Greenhow, referred to, was discussed at the Pathological Society's meeting, March 5th. The specimen of cancer of the suprarenal capsule, from a girl aged 12 years, was exhibited. The tumor was twice the size of the kidney, and closely adherent to it. No other organ was affected with cancer.

Trephining in Africa.

The *British Medical Journal* for August 10th, 1867, p. 110, says:

Broken heads are common enough in North Africa and in Greece. M. Martin, a surgeon-major of the French army, publishes an account of the proceedings of certain families or tribes, whose privilege it is to trephine the cranium of every one of the inhabitants of the Djebel Aures who has the misfortune to receive "even the slightest wound." Of course, where whole families live by trephining, few heads are sacred. M. Martin has seen several unfortunates who had undergone the operation five or six times. The age and sex of the wounded do not interfere with the operation; and children, young girls, or women, submit with as much resignation to this cruel practice as the strongest and most courageous men. Besides riddling the cranium with holes, they add cauterization of the wound, and even the introduction into the cranial cavity of fluids intended to facilitate the exit of extravasated blood. An astonishing proportion of the victims is said to survive this barbarous proceeding.

Treatment of Diseased Joints by Escharotics.

Dr. F. KIRKPATRICK, of Dublin, read before the annual meeting of the British Medical Association in Dublin, August, 1867 (*British Medical Journal*, August 31st, 1867, p. 177), a paper on the subject of Diseases of the Bones and Joints, principally with regard to a new mode of treatment by incision, and the deep introduction of the caustic

potassa cum calce into the cancellated structure of the articulating extremity of the bone in the incipient stage, or that of inflammatory congestion, and into the joint itself in the very advanced period. He says :

Having often remarked the healthy reparative action that followed the use of the potassa cum calce in sinuses in the groin, neck, and axilla, I began to introduce it into fistulæ leading down into diseased bone, at first with caution, then more boldly; and finally, disregarding Sir B. Brodie's strong injunctions against letting potassa fusa enter a sinus, I proceeded to carry its action deeply down, converting the small contracted painful orifices into large funnel-shaped openings and bringing the carious bone into view, and within reach of the further application of the caustic. In this manner, several cases of disease of the carpus and tarsus, and of the flat and superficial bones, were successfully treated; the caustic being reapplied at intervals of a few days, to keep the orifices freely open until the carious bone had disappeared or was covered over with firm granulations.

In a similar manner, several cases of chronic necrosis were treated, the caustic being very freely used, destroying all foul undermined integument, and leaving, after the removal of the sloughs, large clean circular openings, more than an inch in diameter, and extending deeply down to the sequestrum, into contact with which the caustic, in stick and powder, was freely brought. In this manner, two cases of necrosis of the fibula, very similar to each other, in which numerous openings led down to diseased bone, and where the patients were reduced to the lowest state by years of suffering, were perfectly cured within six months.

In a case of necrosis of the heel in a delicate lad, who was deformed by the effects of an old hip-disease, a caustic perforation was made at each side of the heel, and the powder was brought into contact with the dead bone, until it was so removed that a catheter was passed quite through the heel; no inflammation nor constitutional disturbance having been caused or excited.

I can speak with the utmost confidence of the application of this remedy in all such cases of caries affecting the superficial bones. The caustic perforations may be multiplied in proportion to the extent of the disease, respect being paid to important nerves and vessels, and care being taken not to destroy sound structure or periosteum beyond the limits of the diseased surface of the bone. Before I speak of the application of this remedy to the arrest of the early stage of joint-disease, I may be permitted to allude to the important question, as to the structure which is first attacked. My own opinion accords with those authors who believe that, in the great majority of cases, the disease commences in the cancellous structure of the heads of the articulating bones. That there are rare cases where it begins in synovial membrane or cartilage, and mixed ones which, seen at a later period, may perplex diagnosis, I fully believe; but I consider that those instances where the *fons et origo mali* arises in the bone preponderate enormously. My own opportunities of obtaining pathological evidence have left me without a doubt on the subject, and the practice which I propose is based upon that conclusion.

In Sir B. Brodie's great work on the Joints, he recognizes the fact of the frequent origin of disease in the cancellous structure; and he describes the distension of the heads of the bones with a reddish medullary fluid, then softening of the tissue, and finally supuration; the matter either forcing through to the cavity of the joint, or reaching the surface at some position more or less remote; but, whilst he thus clearly recognizes the cause, and graphically describes the disastrous effects, he forbids the remedy, and strongly cautions against an early or premature opening, although he had himself with success trephined the heads and shafts of the long bones in cases of painful and circumscribed

abscess. That he attempted to give relief in a similar manner in those cases of acute articular osteitis which he so circumstantially describes, is more than probable; and I therefore infer that his caution against the early opening of an inflamed bone, was founded on his experience of ill consequences that followed such a proceeding.

Notwithstanding the teaching of this great authority, I venture to propose interference by operation at the very earliest moment that congestive inflammation of the head of a bone can be fairly diagnosed; and I state with confidence, that a perforation made into the cancellous structure, if freely cauterized with the potassa cum calce, will be followed by relief from pain, and that the inflammation which ensues will be only such as is attendant on and accompanies reparative action.

The caustic tunnel may be made at once by cutting down on the bone and piercing the compact tissue with a strong knife, trocar, or small trephine, and then freely cauterizing the full extent of the perforation; or, in less acute cases, a small eschar may be first made, the centre of which being incised, the caustic can be introduced; and, by combining its action with the knife, the tunnel can be carried deeper from day to day in a gradual manner. By means of this combined caustic perforation, I succeeded in arresting disease in its first onset in the head of the radius, in the case of a young man, aged 24, in the year 1861. Since that time, I have tried it with success in several cases of incipient disease in carpal, tarsal, and other superficial bones. I perforated the tibia above the internal malleolus in several instances with curative results; also the great trochanter in cases where its structure, or that of the head and neck of the femur were the seat of osteitis, the cavity of the joint being yet unaffected.

On April 26th last, I exhibited a young man at the Surgical Society of Ireland, into whose trochanter a caustic tunnel had been inserted on March 22d preceding, and which was still freely open. The wasted buttock, obliterated fold of nates, and emaciated state of the entire limb, still existed to proclaim the nature of the disease, but all pain had ceased; the motions of the joint were in a great measure restored, and he walked about before the members of the Society without lameness, although, for three months before the operation, his thigh was flexed, he had constant pain in the hip and knee, and he could not admit abduction, or any extended motion of the limbs. This patient took his discharge to work on May 11th; the contour of the limb being almost restored to its natural fulness, and his general health quite recovered.

Although strongly recommending this treatment for the early stages of acute articular osteitis, and also for the very advanced periods, when caries is established or when a whole joint is converted into a foul suppurating cavity, my experience does not warrant me in advising the practice so strongly in the intermediate periods, where the head of a bone may be the seat of a diffused suppuration, possibly communicating with the joint itself; the caustic, I fear, in this condition of parts, could not extend sufficiently to protect from the constitutional disturbance and risk of pyæmia that might follow.

The principal merit I claim for this caustic treatment is, that it is a powerful, and at the same time the safest, means of correcting nature where she is manifestly in error, and of assisting her operations where they are directed aright; and here, sir, I have the boldness to start from the well-worn professional groove of bestowing a blind admiration upon the proceedings of Nature, as seen in her efforts to restore and repair diseases of bone. Instead of the *vis medicatrix*, which is so perfect and to be relied on in many of our ills, I assert that she exercises in those affections a *vis inimica*, a *vis perniciosa*. From the first onset of inflammation within the cancellous structure, all through the various destructive processes that ensue, she is engaged in hemming up and confining the engaged bone and perpetuating its diseased state; and her reparative operations only commence and

become effective when, either by man's art or by her own late remorseful ulcerations, this imprisonment at the surface is interfered with and, in a greater or less degree, removed.

Ligature of the Femoral Artery according to the Plan of the late Professor Porter.

RAWDON MACNAMARA, L.K.Q.C.P.I., Surgeon to the Meath Hospital, and Professor of Materia Medica in the Royal College of Surgeons of Ireland, in a paper published in the *British Medical Journal*, October 5th, 1867, p. 285, says :

In Mr. Erichsen's work on Surgery, when speaking of the propriety of deligating the common femoral artery, after stating the objections to the procedure, he winds up with this remarkable passage : "This operation, I think, therefore, should be banished from surgery." Whether this sentence is as just as it is sweeping, is the object of the present communication. It is true, in the present position of surgery with respect to aneurism occurring in the popliteal space, that ligature of the femoral artery has been deprived of a great portion of its importance in consequence of the success attending its treatment by compression ; and it is equally true, that the surgeons of this city have borne no small share in bringing about this most important improvement in practice. Still, cases will occasionally occur, which either are unsuited for treatment by compression, or in which, no matter how diligently or scientifically employed, it will fail in effecting a cure ; and then our only resource is occlusion of the main vessel, either by the old-fashioned, time-honored ligature, or by the more modern system, acupressure. When such cases present themselves, therefore, it is all-important that that form of operation should be selected which, beyond all other considerations, is attended with the minimum of risk to the patient's life, and which (a minor consideration, to be sure) is easiest of execution by the surgeon. Should ever the operation, the merits of which I am about to bring under notice on the present occasion, be recognized as the proper one to be selected under circumstances calling for deligation of the femoral artery, it will be a subject of interest to look back and observe how, as the science of operative surgery progressed, the tendency has been to ascend higher in selecting the site for its deligation—from Hunter's canal to Scarpa's space, and now from Scarpa's space to what, I doubt not, will yet be known as Porter's space.

The manner of securing the vessel in this situation will require but a few words to bring it in all its details before your mind's eye : a transverse incision, about two inches in length, parallel with, but half an inch below, Poupart's ligament ; the incision being so effected as to leave the artery in its centre. The method of performing this incision is simple in the extreme. A fold of skin is pinched up—the operator himself holding one side of the fold, his assistant the other ; and it is transfixed with a sharp-pointed bistoury ; and, by cutting outwards, the first incision will be completed. The most ordinary care will insure the artery's being in some portion of the wound. A very few touches of the scalpel, with the assistance of a director, will now expose the vessel ; and it can be secured in any way that the operator may select. The plate, published some years back by the present Mr. Porter, will at a glance enable you to take in all the details of his father's operation. The great advantage of this operation is that, in this situation, the artery is widely separated from its vein ; and consequently there is no danger of wounding it. When I say "widely" separated, of course I speak in an anatomical sense ; the space lying between them in reality being about two to four lines. All operating surgeons know the danger that exists of wounding the vein when either Hunter's or Scarpa's space is

selected as the site of operation ; and the records of surgery are not wanting in numerous cases where, in the most skilful hands, this accident has, I may almost say, unavoidably occurred. The lamentable result of such an accident as including the vein in the ligature require not to be dwelt upon here by me. All this is gotten rid of by selecting Porter's space. The vein cannot be wounded, much less included in the ligature ; and thus deligation of the femoral artery is happily freed from one of its most serious risks. The facility with which the artery is reached also is a recommendation.

The operation has already been performed eight times in this city—three times by the late Professor Porter, once by the late Mr. Smyly, once by Mr. Butcher, once by Mr. Porter, once by Mr. Collis, and once by myself. Mr. Butcher's case was fatal, as was also Mr. Collis's ; all the rest made good recoveries, and, so far as I know, are still alive. So that, out of eight cases operated upon in Porter's space, we have six recoveries to two deaths—a sufficiently respectable result for an operation that should be banished from surgery ! But, if we analyze the two unsuccessful cases, the results will be still more favorable. In Mr. Collis's case, as you will perceive from this morbid specimen, a most unfortunate anomaly exists in respect to the giving off of the profunda—it detaching itself from the femoral at the very point where the ligature was applied. In Mr. Butcher's case, the operation was performed for a wound of the profunda artery, in which, after most persevering exertions, he was unable to reach the wounded vessel itself, and consequently he ligatured the femoral in Porter's space ; and, although the patient died in eleven hours after the operation, it, so far as operative interference goes, has a just right to be looked upon as a successful case, inasmuch as the patient lost no more blood after Mr. Butcher tied the femoral, the poor man having evidently sunk from the effects of all the blood he had lost previously to Mr. Butcher's seeing him. At all events, it has no right to be considered one way or other in calculating the statistics of this mode of procedure.

The case in which I was called upon to tie this vessel was, in many respects, a most interesting one. It was that of John Donoghue, whose leg I amputated for extensively diseased tibia, associated with enormous abscess in the belly of the gastrocnemius muscle. The morbid specimen on the table shows the condition in which the tibia was. I say this case was in many respects a most interesting one ; and that it was so, will be admitted when I state that it was the first important operation in which the merits of acupressure had been tested in this city. I had previously used it in minor operations, such as ablation of the breast, &c., with such satisfactory results as to justify my employing it on the present occasion. I also selected Mr. Syme's operation through the condyles of the femur, with long posterior flap ; and nothing could be more satisfactory than the appearances the stump presented for some days. The needles were all removed within forty-eight hours, not one drop of blood escaping ; and everything seemed to promise a rapid and satisfactory convalescence, when, from some cause, to me inexplicable, the shaft of the femur appeared to take on the same form of disease as the tibia had suffered from ; pus formed deep down in the muscles, requiring deep and free incision to give it vent ; and for many days large quantities of pus were poured forth, until, on visiting him one morning, I found the whole stump one vast pulsating tumor, the artery having been evidently opened by the progress of the ulcerative process. That this had nothing to do with the acupressure, I think will be admitted, when I state that the needles had been removed on the 9th of April, and that this pulsating tumor did not present itself until the 14th of June following. Deep and anxious were the consultations that took place as to what could best be done for the man now,—amputation at the hip-joint, amputation high up of the thigh, ligature of the artery, &c. ; all of which, however, were brought to an unexpected close by the man's firmly declining any operative interference whatever : " he had had

operations enough performed on him, and would go under no more of them." Pressure was out of the question; he could not bear it for five minutes at a time. The grave nature of his position was fairly set before him; still would he not listen to any operative interference; and at last I had to content myself with leaving him in constant charge of one of my apprentices,—having, however, explained to himself what he should do in case, by any mischance, the blood should burst out in this gentleman's absence, which, as luck would have it, actually did occur. He immediately pressed his thumbs firmly down on the artery in the groin, at once arrested the flow of blood, and shouted for help. On my arrival at the hospital, I found him all but dead, nearly speechless, cold, pulseless, with hiccough: to all appearances sinking rapidly. Stimulants having first been freely administered, I proceeded to secure the vessel, as already described, in Porter's space; and I frankly avow that never did I approach an operation with so much repugnance, inasmuch as I firmly believed that he should have died during its performance; and never can I forget the kind and valuable encouragement and assistance rendered me on that trying occasion by each one and all of my colleagues. The man, however, survived the operation; the ligature came away on the 22d of July; and, after a tedious and slow convalescence, he ultimately left the hospital in perfect health.

Diagnosis of Tumors of the Breast.

THOMAS BRYANT, Esq., F.R.C.S., Assistant-Surgeon Guy's Hospital, in a clinical lecture on Tumor of the Breast (*British Medical Journal*, Sept. 28th, 1867, p. 263), after calling attention to the three modes of investigation by inquiry into the history of the case, by inspection of the part, and by manual examination, which should all lead to the same conclusion, in order to render the diagnosis certain, proceeds to state:

Let us consider for a few minutes the pathological points of difference between innocent and cancerous tumors, and in what ways clinically they differ, for clinical observation and pathological knowledge should invariably go hand in hand. Amongst other points of difference, the following is without doubt the most important: "Simple tumors separate tissues in their growth, but never infiltrate; cancerous as a rule infiltrate, and rarely separate."

No more important point can be brought forward to aid the surgeon in his diagnosis of a tumor than the above. For a simple or innocent tumor, however long it may be in growing, and however large a size it may attain, will never do more than separate the parts between and beneath which it may be developed. The bones may even be absorbed by its presence, but they will never be involved; and the skin may be so stretched and attenuated by its distension as to ulcerate and burst, but it will never be infiltrated with the tumor's elements. This fact is well exemplified by a close examination of the margin of a cutaneous opening, the result of over distension from a simple tumor, for it will appear as if cleanly cut, or rather punched, at its edges, but never thickened or diseased.

With the cancerous tumor, however, a very different condition has to be described, for a cancer has the peculiar property of freely infiltrating all the tissues upon which it presses. As the tumor approaches the surface, the skin will become involved; at first, it may appear as if drawn down to it, then puckered, and afterwards as though glued to its surface; at a later stage of the disease, the skin will become infiltrated with the cancerous elements, and to the finger feels firm, fibrous or tuberculated, and when ulceration has commenced, the edges of the skin will be palpably indurated, thickened, and infiltrated with cancerous products. The contrast between these different conditions of integument

in the two classes of tumors is most marked, and very important, and forms a most valuable means of diagnosis in the extreme stage of simple and malignant tumors, whether of the breast or of any other part.

There is one other point of difference to which I would wish to draw your attention, and it is this: "That *simple* or *innocent* tumors affect the patient solely through their local influence, and have no tendency to multiplication in other tissues, nor to involve the absorbents with which they are connected."

"*Cancerous* tumors not only affect the patient through their local influence, but have a marvellous tendency to multiplication in any part of the body, more particularly in the internal, and never exist for any period without implicating the lymphatics of the part with which they are connected."

This difference between the two classes of cases is most important, and forms a valuable means of diagnosis even in an early condition of disease; for in a case of tumor, the nature of which is doubtful from both its local and general conditions, the presence or absence of an indurated absorbent gland, not an inflamed one, will weigh down the balance of doubt, and tend more strongly than anything else to solve the problem; for it is as rare to meet with indurated glands in a simple tumor, as it is rare to miss them in a cancerous.

English Surgery.

Dr. MERIC, of London, referred to the happy effects or results of English surgery, especially as regards ovariectomy. He also had been struck with the relative danger of amputations, made necessary by railroad accidents. On this point he questioned M. Verneuil. He recommended, in order to avoid hemorrhage, to leave the wounds open for a considerable length of time.—*International Medical Congress, Gazette Hebdomadaire*, August 30th, 1867.

Foreign Body in the Posterior Nares.

HENRY LOUNDS, Esq., Surgeon to the Liverpool Northern Hospital, reports, in the *British Medical Journal*, for September 7th, 1867, p. 206, the following case:

A child, aged 15 months, was brought to the Liverpool Northern Hospital on July 20th, 1867. It had been seen the day before, playing with a brass ring, and this, the mother thought, had become fixed in the throat, as the child had not been able to swallow without great difficulty, and then only liquids. There was a sound, scarcely amounting to a whistling noise, with the respiration. On examination, a rounded substance could be felt lying above the soft palate on the left side and depressing it, and, by drawing the velum a little forward, the sharp edge of a metal ring could be felt projecting from the posterior nares. The hard foreign body could be felt by a probe passed through the left nostril, but could not be moved. The point of the probe could easily be passed through the ring out into the throat.

A little chloroform was given to the child, and then, with a pair of curved forceps, used with some little force, I was able to push the substance back into the throat with one hand, and there received it into the finger and thumb of the other. So large a body could not have been introduced through the nostril, so I presume that, while the child was on the point of swallowing the ring, a choking fit came on and drove the substance behind the soft palate, where it became impacted at the orifice of the posterior nares on the left side.

Steel Ring Impacted for thirteen and a half years in the Naso-Pharyngeal Fossa of a Child. Detection by Rhinoscope, and Removal.

The following case, reported by WILLIAM HICKMAN, M.D., F.R.C.S., Surgeon to the Western General Dispensary (*British Medical Journal*, September 28th, 1867, p. 266), is interesting in connection with the above, and as showing how long a foreign body may remain undetected, without a very careful examination :

Caroline M——, a delicate and intelligent-looking girl, in her sixteenth year, was brought to me at the Western General Dispensary, in the autumn of 1866, supposed to be suffering from a polypus of the nose. She could not blow through the left nostril at all, and the mucous membranes of both appeared thickened and red, but no actual polypus could be discovered. On looking into the mouth, the soft palate was seen to be much swollen, especially on the right side, and a small fistulous opening was apparent just above the origin of the uvula. A rhinoscopic examination was now made, and a wide, square-outlined, black object, was at once seen in the naso-pharyngeal space above the soft palate, completely imbedded in the swollen mucous membrane, which projected into the space from the walls around. To the probe this was found to be quite hard ; the tip of the finger could only just reach it and push it slightly away or to one side. An ineffectual effort was made to push the foreign body down into the mouth by means of an instrument introduced through the nostrils ; but on this failing, guided by the history of the case and the appearance of the foreign body, I made a hook with a long probe, bent into three curves, and passed it up behind the palate ; and after some time and considerable trouble, and with the assistance of the forefinger of the left hand, I managed to pass the hook through the ring and bring this away on the probe. The ring was a wide steel one (completely blackened and rough from its lengthy sojourn), which had belonged to one of the old-fashioned long purses ; it measured nearly three-fourths of an inch in diameter and nearly half an inch in width.

The following history was obtained from the mother : Thirteen and a half years previously, when not quite two years old, the child was seized with a choking fit whilst at play, and ran to her mother, endeavoring to attract attention to her throat. The mother thrust her finger into the child's mouth, and felt distinctly the circular outline of a ring, but it immediately escaped from her touch, and she could not bring it out, and, as the choking symptoms subsided, she concluded it must have been swallowed. It was never detected in the motions, however, and in the course of a week or two, a brownish discharge took place from the nose. So the child was taken to a medical man, and afterwards to several others, but all assured the mother there was nothing lodged. From that time the child had been always ailing, and was with difficulty reared, a delicate, strumous-looking girl. The discharge from the nose diminished and became colorless, but continued ; the nose became quite impervious to air, so that the mouth was noticed to be always open ; she became very deaf, lost the sense of smell, and was continually having attacks of sore-throat, and at last the breath became so offensive that she was not allowed to attend school, and could get no other children to associate with her. During all this time she was constantly being taken to different medical men, and was treated for sore-throat, ulcerated throat, enlarged tonsils, fissure of the palate, polypus of the nose, etc.—the mother's account of the accident with the ring being made light of, until at last, as she said, she was almost ashamed to relate it. The child remained a month in one of the provincial

infirmaries, and had one of her tonsils excised; the other was also to have been removed, but that she was obliged to return to London with her parents.

Lithotomy by a New Operation.

In the *Brit. Med. Journal* for October 12th, 1867, p. 313, it is stated that Mr. HENRY LEE, of St. George's Hospital, recently performed and described a new operation, or rather a modification of the lateral operation for lithotomy. The patient was a boy three years of age, who had at one time had retention of urine, and afterwards passed his urine very frequently, and always with pain. The first time he was sounded, Mr. Lee felt a stone; but subsequently he and other surgeons had sounded without being able to detect anything in the bladder. A week ago, under chloroform, a calculus was again felt; and, as the symptoms continued unabated, the operation was determined upon.

After an ordinary grooved staff had been introduced, the operation performed consisted of a straight incision in the median line, extending a distance of a little more than the posterior half of the perineum between the scrotum and anus, stopping a couple of lines in front of the opening of the bowel. From this point the incision through the skin was continued outward and backward so as to embrace about one-fourth of the circumference of the bowel, at the angle formed by these two portions of the incision. The scalpel was then introduced in the median line, with its back toward the rectum. It was then passed forward into the groove of the staff, guided by the finger in the rectum. As soon as it had entered the membranous portion of the urethra it was withdrawn, and a curved bistoury with a projecting probe-point introduced. The probe-point was then made to slide along the groove into the bladder, the edge of the knife being held to the operator's right side, as in Buchanan's operation. The heel of the knife was then made to describe a portion of a circle corresponding to the external incision; while the point, while being withdrawn, was moved little from the median plane. Mr. Lee mentioned that in this way all the advantages of a free external incision were obtained, with a very small opening into the bladder. The plan had, moreover, the advantage of insuring that the point of the knife had entered the bladder. It was, he thought, an operation the simplest in conception, the easiest in execution, and the least liable to be followed by any untoward accident, of all the modifications of the lateral operations for lithotomy. The groove in the staff was reached with great certainty, being felt by the finger in the rectum. The rectum was secured from danger by the edge of the bistoury being directed laterally. But the greatest advantage, especially in operating upon children, he considered to be the certainty of the incision extending into the prostate gland. It was well known that accidents had occasionally occurred from the prostate not being incised. When this had happened, the finger introduced had sometimes pushed the prostate before it; and in this way the prostate had been detached from the membranous portion of the urethra, and pressed toward or into the bladder, so that a cavity was formed without the bladder having been opened.

In the present instance, a very small stone came away at once between the blades of the forceps, together with some very small fragments which had apparently lodged in the urethra. The stone was so small that it was doubted at first whether it was sufficiently large to give the sensation experienced when the sound had been used. The cavity of the bladder was, however, carefully explored, and nothing further detected. The symptoms had all subsided on the fifth day after the operation.

Two Cases of Œsophagotomy for the Removal of Foreign Bodies, with a History of the Operation.

By DAVID W. CHEEVER, M.D., Assistant Professor of Anatomy in Harvard University. (Pamphlet, 8vo., pp. 46. Boston, 1867.)

In this very interesting and exhaustive essay, Dr. CHEEVER narrates two successful operations for the removal of foreign bodies from the œsophagus by external incision, and gives a tabular statement and historical summary of all the authentic cases on record. After diligent search he has been able to collect only fifteen additional examples of this rare operation, of which seven were in France, one in Italy, one in Belgium, one in India, and five in Great Britain; his own being the only ones in the United States.

Dr. Cheever has, in our opinion, succeeded in demonstrating that œsophagotomy deserves a place among the operations of necessity; and that, if done early, before destructive inflammation has set in, it is an eminently successful procedure. Of the seventeen cases there were only four deaths, or less than twenty-five per cent.; and in all of these the fatal issue was due to secondary complications, the result either of delay or prolonged or incautious attempts at extraction by the mouth. In one there was pneumonia at the time of operation; in two gangrene of the pharynx; and in one retro-œsophageal abscess opening into the pleura; so that it would appear that the dangers from delay hitherto have surpassed those of the knife, no deaths being referable to the operation itself. After reasonable efforts at extraction have failed; œsophagotomy, therefore, appears to be a perfectly justifiable procedure.

As to the manner of the operation, Dr. Cheever, in common with most writers, favors the lateral method. An incision, three and a half inches in length, starting midway between the left sterno-mastoid muscle and larynx, and opposite the top of the thyroid cartilage, is carried parallel to the inner edge of the muscle to the sternum. This divides the skin, superficial fascia, and platysma, when the edge of the sterno-mastoid muscle is laid bare. The upper belly of the omo-hyoid muscle is next dissected out, and the lower boundary of the superior carotid triangle fairly exposed. The omo-hyoid is then drawn to the inside, or the central line of the neck, thereby affording more room for the deeper dissection than when the muscle is drawn outward. The carotid sheath is now plainly felt, and is drawn outward; and by a gentle dissection with the director and the handle of the scalpel, and an occasional touch with the edge of the knife, the connections between the carotid sheath and the thyroid gland, with its superimposed muscles, are broken up, and the œsophagus reached. The larynx and trachea are next lifted and tilted over, when the foreign body should be searched for through the œsophageal walls.

In case the foreign substance cannot be detected by touch, it will become necessary to introduce a stomach tube by the mouth, and open the œsophagus by a vertical incision upon it, towards its posterior aspect, and just below the cricoid cartilage. A careful exploration with the finger should then reveal the foreign body, when it may be withdrawn without difficulty. In both cases Dr. Cheever was obliged to resort to this procedure, and in both the wound was left open.

With respect to the treatment of the patient after the operation, it is advised that the diet be absolute, and elastic tubes to feed the patient through be avoided. Not even fluids should be swallowed at an early period, since they will infiltrate among the long muscles of the neck and establish suppuration. After a few days a safe sinus is established by adhesions, when drink can be taken freely and without risk. Milk then forms the blandest and the most comprehensive article of food. In both cases from two to three ounces of beef-extract were thrown up the rectum every six hours for many days, forming,

at first, the sole nourishment. These were attended with occasional enemata of soap and water to clear the bowel. Water was supplied the first few days by bathing the wrists, and flexures of the arms, and by wetting the lips. In neither patient was the œsophageal wound closed by sutures, nor does Dr. Cheever deem it advisable to do so. In one case the wound had united in three weeks, and in the second in three weeks.

From an inspection of the table of all the recorded cases of œsophagotomy, it would appear that the operation was first performed by Goursauld, in 1738, on account of the impaction of a portion of bone. Since that date it has been repeated by Roland, Arnott, Lavacherie, Martini, Delarocherie, Antoniesz, Demarquay, Cock, and Flaubert, each once; Bégin and Cheever, each twice; and Syme, three times. In eleven cases the procedure was instituted for the removal of portions of bone; twice for coins; once for a small fish; once for a brass pin; once for an artificial tooth and gold plate; and in one instance the nature of the foreign substance is not noted.

A New Metallic Snare for the Ligature of Arteries.

We find in one of our exchanges that Prof. N. R. SMITH, M.D., of the University of Maryland, has recently devised and successfully used an instrument to which he gives the above name. "It consists of a small silver tube, of the size of a No. 1 catheter (of the length to suit the case), and a fine annealed wire of silver or iron, small enough to pass double through the tube. At one end of the tube, the double extremity of the wire will project in the form of a loop, or snare. The cut extremities of the wire will project at the other extremity, sufficiently far to be conveniently seized by the fingers.

"The operator, taking the tube in his fingers, or forceps, lays the projecting loop of wire over the bleeding vessel. An assistant then seizes the artery with the artery-forceps, or tenaculum, and elevates it. The operator then draws the wire by its extremities, and snares the extremity of the artery. He fixes the wire by simply bending it sharply over the margin of the tube.

"Supposing it to be after an amputation that the apparatus is used, the operator will now close the wound as usual. In eight hours after the application, the snare may be removed by simply drawing the loop of the wire into the tube, which causes it to act like a small *ecraseur* on the end of the vessel. The tube then slips easily from the wound, and no foreign substance is left. There will be no bleeding, as a coagulum will have been formed, and because also of the manner in which the artery is severed.

"In case of amputation of the thigh, I would leave the apparatus attached to the femoral artery for two days, and then remove it without fear.

"The advantages claimed for this apparatus are these:

"1st. It is applied with far more ease than a ligature, the loop being simply laid over the orifice of the vessel, and then the wires drawn—an exceedingly simple and easy manipulation. It obviates the passing of the hand around the tenaculum, as in applying the ligature (which often disengages the instrument), and obviates the tying of knots.

"2d. It has the advantage of being metallic and non-absorbent.

"3d. It is removed with even more facility than the ligature, or needle in *acupressure*, and no foreign substance is left in the wound.

"4th. It is far more simple than *acupressure*, and inflicts no wound as does the needle in that apparatus.

"The apparatus is equally appropriate for the ligature of arteries in the treatment of aneurism. In that case, the wire must be first carried around the artery with the aneurism needle, and then the ends conveyed through the tube. The wires may then be drawn tightly. The tension may be increased after two or three days."

A Case of Excessive Contraction of the Mouth following Scarlet Fever, Relieved by a New Operation.

By CHARLES A. HART, M.D., of New York (New York Medical Journal, Sept., 1867, p. 499).

In this communication, Dr. Hart describes a new and simple operation for the relief of a contracted mouth, which presents the advantages over all other procedures of the kind, in that there is no loss of substance, and a perfect lower lip, with a crimson mucous border, is formed.

The case was that of a girl, ten years of age, who had been attacked seven years previously with scarlatina, attended with extensive sloughing of the cheeks and fauces. The mouth was contracted to such an extent as only to admit the tip of the little finger, its transverse diameter being nine lines. The angles were occupied by dense cicatrices, extending on to the cheeks and chin, and the cheeks were extensively adherent to the superior maxilla.

For the relief of the deformity, the following operation was performed, the patient being under the influence of chloroform. "The little finger was forced into the mouth, to extend the cheek, and a very delicate scalpel passed from the angle of the mouth, horizontally, between the tissues of the lip, to the extent of about three-fourths of an inch; the point of the blade was then carried up, about five lines, by depressing the handle, and then made to cut obliquely into the cavity of the mouth, and, in this position, gradually drawn towards the point of entrance, thus forming a flap from the inside of the upper lip, lined with mucous membrane. The second slit consisted in extending the angles of the mouth about three-fourths of an inch, by incising the skin and other tissues, anterior to the first point of entrance of the knife. The above described procedure was repeated on the opposite side of the mouth, and with much greater ease, as the enlargement of one side afforded more space for manipulation. The third step consisted in rolling the flaps, which were formed by the first steps on each side of the mouth, over the raw surface of the new lower lip, from the situations of the old angles to the new ones, and retaining them in situ by several points of silk sutures, thus bringing two raw surfaces into apposition, and giving a crimson mucous border to the lip."

The stitches were removed on the fourth day, when union was perfect, and the result was most gratifying. The mouth could be widely opened, and its extent was increased twelve lines.

Report on Ligature of the Subclavian Artery.

By WILLARD PARKER, M.D., Professor of Surgery in the College of Physicians and Surgeons, New York (Transactions of the American Medical Association, vol. xviii, p. 237, 1857).

In this report, Professor Parker tabulates one hundred and fifty-seven cases of subclavian deligation, including five of his own. Many cases have been omitted from the table, for the reason that they were recorded with so little detail. Among these may be mentioned thirty-five which occurred in the Federal army during the late war, nine by Pirogoff, and ten or twelve, of which casual mention has been made in various treatises and medical journals, either because the volumes containing them were not accessible, or because they were unaccompanied by references.

The case of Morton, published in the American Journal of the Medical Sciences, for July, 1867, of course appeared too late for incorporation in the report.

An analysis of Dr. Parker's table, the cases of Pirogoff, and those contained in Circular No. 6, S. G. O., shows that the subclavian artery has been ligated 196 times, of which 88

were successful, and 107 fatal, the result of one not being noted; thus affording a mortality percentage of 54.59. The causes of death were noted in 68 cases. In 30 it followed from hemorrhage, in 11 from exhaustion, in 8 from gangrene, in 4 from pleurisy, in 2 from pleurisy and pericarditis, in 1 from pleuro-pneumonia, in 1 from pleurisy and inflammation of the sac, in 2 from sloughing, and in 2 from suppuration of the sac, in 2 from pyæmia, in 1 from asphyxia, in 1 from effusion in the brain, in 1 from disease of the kidney, in 1 from inflammation, and in 1 from intercurrent events.

The artery has been tied in the first portion of its course 13 times without a single recovery; in the second portion of its course 9 times, with 4 deaths, and in the third portion of its course 174 times, with 89 deaths. The operation has been performed, so far as the statistics show, on 138 males and 14 females, and their age is noted in 129 instances. The youngest is 18 years, the oldest 73 years, the mean being 38 years and about two months.

In 134 cases the side affected is noticed; of these, 82 were on the right side, and 52 on the left.

The earliest period of separation of the ligature recorded is the eighth day, the latest the one hundred and thirteenth day, the mean the twenty-first day.

In the case of aneurisms the proximal ligature has been applied in 110 instances, with 48 deaths, or a mortality of 43.6 per cent. The distal ligature has been applied in 10 cases, with 8 deaths, or a percentage mortality of 80.00.

For idiopathic axillary aneurism, the proximal ligature was applied 80 times, with 22 deaths, or a mortality of 27.5 per cent. For traumatic axillary aneurism, proximal ligation was practised in 24 instances, of which 8, or 33.3 per cent. were fatal.

The subclavian has been tied in 29 cases for subclavian aneurism, of which 24 were idiopathic and 5 traumatic. The proximal ligature was applied in 22 cases of the former, with 13 deaths, the distal in 2 cases, both of which were fatal. The 5 traumatic cases were treated with the proximal ligature, of which 2 recovered.

The distal ligature was practised 8 times for aneurism of the innominata; of these, 6 were fatal.

For other causes than aneurism, the subclavian has been ligated in 70 instances, with 48 deaths, thus affording a ratio of mortality of 68.5 per cent.

The Operation for Varicocele Simplified and Improved.

By A. HAMMER, M.D., Professor of Surgery, Ophthalmology, and Pathological Anatomy in the Humboldt Medical College of St. Louis (Humboldt Medical Archives, October, 1867, p. 78).

Under the above caption, Dr. Hammer describes what he considers to be a novel mode of dealing with varicose spermatic veins. It is nothing more nor less than transfixion of the scrotum, and inclusion of the vessels in a loop of wire. At intervals of every three days, another twist is given to the wire, until it cuts its way out.

We have nothing to say against this procedure; the operation is an excellent one, but it presents nothing novel. We have practised it repeatedly, and have seen it employed by other gentlemen of this city. So far as our own experience warrants us in forming an opinion, however, the metallic thread presents no advantages over the ordinary silk ligature.

Ligation of the External Iliac Artery for Femoral Aneurism.

By Dr. TOLAND, of San Francisco (Pacific Medical and Surgical Journal, June, 1867, p. 15).

Dr. Toland tied the external iliac artery for femoral aneurism, occupying the entire

Scarpa's triangle. The sac of the aneurism suppurated, but the patient, notwithstanding the exhaustive discharge, was cured in about three months.

Ligation of the Common Carotid Artery for a Punctured Wound of the Right Internal Carotid.

By C. D. OWENS, M.D., of St. Louis (St. Louis Medical and Surgical Journal, N. S., Vol. iv, No. III, 1867, p. 257).

A man, aged 35 years, was stabbed in the right side of the neck with an ordinary pocket-knife, inflicting, as it was supposed, a wound of the internal carotid artery. On account of an immense extravasation of blood, a bad light, and the want of proper assistance, the common carotid was taken up in the lower part of the neck, in preference to cutting down upon the bleeding vessel and applying two ligatures. The man was greatly exhausted at the time of the operation, and death ensued in twenty hours.

On the Proper Means to Obviate the Inconveniences of Hemorrhage in Certain Operations on the Face.

By M. VERNEUIL (Archives Générales de Médecine, September, 1867, p. 358).

In a communication made to the Paris Academy of Medicine, M. Verneuil made some remarks upon the inconveniences attending hemorrhage in certain operative procedures upon the face, and suggested that they might be obviated by plugging the posterior nares as a preliminary measure. The advantages claimed for it are as follows:

1st. It is extremely serviceable in all bloody operations upon the nasal vault, the interior of the nasal fossæ, the maxillary sinus, the upper portions of the superior maxilla; in a word, in all cases in which blood is liable to pass back into the pharynx.

2dly. It certainly prevents the flow of blood into the pharynx, when the palatine arch is respected; and, even in these cases, it should still be practised during the early steps of the operation.

3dly. In suppressing the backward flow of blood, and the reflex movements which result from it, plugging the posterior nares enables the surgeon to act with deliberation, and without fear of a hemorrhage, which is, above all, easy of control.

4thly. It also enables the surgeon to keep up complete anæsthesia during the entire operation, which should always be aimed at, as pain is not only abolished, but by controlling all causes of sudden congestion of the face, venous hemorrhage is diminished from the surface of the wound.

5thly. Plugging the posterior nares should be done before the administration of chloroform, since the co-operation of the patient is desirable, and, to be of any benefit, it should always be thorough. When the operation is completed, and the bleeding has ceased, the plug should be removed, as its presence will only prove a source of annoyance.

6thly. Both nares should be plugged, in the event of the septum being perforated, or when the operation involves both nasal fossæ.

Varicose Veins, Ligation and Depletion.

Dr. B. HOWARD, of New York, reported at the last session of the American Medical Association (see *Transactions*), his method of ligating and depleting varicose veins, and details a case in which a radical cure was effected. Nine ligatures were introduced at different points, first below, near the ankle, then above, as near the popliteal space as

necessary, passed by means of an aneurism needle, the point of which unarmed was made to pierce, and then to emerge from the integument at points opposite each other; the needle, then armed, was withdrawn, disarmed, and the ligature, a silver wire, tightened over the vein and integument lying over it by means of Bozeman's leaden disk and buck-shot. The swollen veins were then punctured and pretty effectually drained. The two lowest and the two highest ligatures were first tightened, then the depletion induced, and after this the intermediate ligatures were secured. On the tenth day, the ligatures were withdrawn. No indication of any reappearance of the trouble had taken place several months after the operation. The advantages of this mode of operation are that the veins do not only become occluded at separate points, but the sources of danger from retained clot and open condition of the vessels are avoided.

Statistics of Lumbar Colotomy (Amussat's Operation).

This table, by Prof. GEORGE C. BLACKMAN, of Cincinnati (*Transactions American Medical Association*), gives statistical details of forty-five cases. The author concludes :

At the discussion following the reading of Mr. T. Holmes's paper on lumbar colotomy, before the Royal Medical and Chirurgical Society of London, March 27th, 1866, Mr. Curling stated that he had himself operated in eleven cases, and as we have already added to our list two of these, we have altogether fifty-four operations. His general summary is as follows. In nine cases, the operation was undertaken to relieve obstruction caused by malignant diseases; five were fatal and four recovered, and in none of the fatal cases did death result from the direct effects of the operation. In the remaining five cases, in which there was no obstruction, the operation was performed to relieve the distressing symptoms of disease in the rectum. All of them recovered favorably.

Animal Vaccination.

The entirety of manifestations, which compose the evolution of vaccinia, constitute a formula comprising: inoculation, incubation, pustulation, the march of the eruption, its duration, termination, the epoch of its virulence, its degree of virulence, and the resistance and the conservative faculty of the inoculable principle. Each, and all of these terms, have one signification, and a signification, taken wholly or singly. It is not my intention to study them in detail. I confine myself to pointing out the most general results of their comparison in the two vaccinæ.

A first difference is in the march of the two eruptions. Animal vaccine is more slow to show itself, more irregular in its mode of appearance; but once out, it runs its course more rapidly than human vaccine; it lasts in all, eight days, and its period of violence three or more, from the fourth to the sixth day inclusive. It is almost double the human vaccination.

The duration of the violence is not less different in the virus collected and preserved between plates, or in tubes, than on the *vaccinifère*. Rigal (of Gaillæ) used with perfect success crusts of human vaccine virus preserved for many years; animal vaccine matter does not retain this property beyond a few weeks.

On this first head, then, purely nosological, purely objective, of the evolution of the two vaccinæ, it results, that the human virus has the superiority of manifestation.

The commission was confined to inoculating with the vaccine matter of one heifer on another heifer. Why was there not made a series of inoculations, with the virus from a child, on a heifer, and then have made a comparative study of a series of the transmission

to man, of a virus, renewed by an inoculation of animal virus, in regard to a series of transplantings of the old primitive virus? We could then have determined which of the two would preserve the better and the longer, its first qualities.—Dr. GUÉRIN, in *Gazette Hebdomadaire*, etc., etc., August 30th, 1867.

Operation on the Knee-joint.

M. DÉSORMEAUX, Surgeon at the Necker Hospital, reports a cyst in the popliteal space, —a foreign body in the articulation of the right knee,—extraction,—death. The patient was a very old man, and had been suffering for three years. The following are M. Désormaux's reflections on the case :

The fatal and rapid march of accidents, it seems, would make one believe that such a cyst should never be laid open. But looking beyond this, it was not possible to determine the presence of liquid in the popliteal cavity without recognizing a foreign body, since flexion or extension of the limb always gave the same volume to the tumor. Moreover, as there was no appearance of liquid in the knee, we may suppose two conditions : The one that the cyst communicates with the articulation by a fraying in the fibrous capsule ; or, again, that the consecutive inflammation of the punctured cyst was propagated through the articulation, and produced an acute arthritis. After what I have said, the first hypothesis is inadmissible. It is probable, then, that there was inflammation in the neighboring parts. As for the rest, what is there astonishing, when we see abscesses of the breast or of the pectoral walls produce, by contiguity, an effusion in the corresponding pleura?—*Le Mouvement Médical*, October 27th, 1867.

Results of Operations.

In a discussion in the International Medical Congress, at Paris, M. VERNEUIL said :

It is well known that cutting for stone, and lithotritry, are very dangerous when the bladder and the kidneys are the seat of old and deep alterations : that tracheotomy is much more benign when it is practised to extract a foreign body than when it is necessitated by diphtheria ; that the amputation of a leg is a very serious matter, if the member is covered with superficial and deep varices ; that the prognostic of the amputation of the breast is more serious when it is made imperative by cancer than when it is performed simply on account of an adenomatous condition of the gland. It has been known for a long time, in regard to the terrible mortality of amputations or resections in those who have a tuberculous diathesis ; and we are beginning to learn that the most trifling operation on a diabetic insures oftentimes certain death. In return, one speaks of the very singular vitative immunity which foreigners enjoy. M. Chevers tells us that latent affections of the kidneys often explain death after operations the most varied, and after wounds of the most trifling character.

But how much still remains to be cleared up ! how many contradictions still exist ! The influence of drunkenness, of paludal intoxication, of acclimation in the wards of a hospital, before the menstrual period, of pregnancy, of lactation, etc., on the results of an operation, or wound : I say that these influences are even now doubted or contradicted.

I believe that erysipelas is more frequent in herpetic and arthritic diatheses ; that often it will reappear, after recovery, many times in the same patient.

I do not believe, as is generally supposed, that amputations and resections are more

serious on healthy patients than on emaciated, puny individuals, who may be likewise debilitated by some chronic lesion. I have observed these facts, 'tis true, as yet, a small number, but they go to prove the negative of this proposition. Military surgeons obtain in their amputations results far superior to ours, which latter are always postponed as late as possible.

I propose to consecrate the best part of my scientific activity and experience to prove that general conditions, old or recent, diatheses, hereditary or acquired, govern most completely the prognosis of surgical operations, and constitute, perhaps, the richest source of operative indications, or contra-indications.—*Gazette Hebdomadaire*, August 30th, 1867.

Treatment of Spina Bifida.

Dr. FAZEUILHE, of Rieumes, having had, in a case of a new-born child, a voluminous spina bifida, adherent by a pedicle of three centimetres in diameter, hesitated not, after evacuating with a trocar the limpid serosity contained in the tumor, to excise it, following the operative directions of M. Dubourg, of Marmande, as given in two successful cases, reported in the *Journal de Médecine Pratique*. In chronicling this new audacity, the *Journal* recalls, with reason, the reserve which men of experience, such as MM. Guer-sant and Giraldes held in regard to curative means employed in spina bifida. The former believed not at all in the radical cure of this affection; and, among the sequelæ to the operation, M. Giraldes determined, among other eventualities, a case of hydrocephalus. M. Fazeuilhe is, to appearances, too confident; it is very certain his example should not be followed in all cases.—*La France Médicale*, October 16th, 1867.

Aneurismal Tumors of Arteries.

M. GOSSELIN, lately appointed Professor of Clinical Surgery in La Charité, read a paper to the Academy on "Aneurismal Tumors of Arteries." He discards the old plan, and takes a new stand. Speaking of this, *La France Médicale* (October, 1867) says:

Contrary to the old practice, the new surgeon of La Charité rejects alike the ligation of the branches, which nourish the tumor, or of the main trunks—of one or both of the primitive carotids, for example, when these tumors have their seat by the head, as is oftenest the case. He also holds the same views in regard to the total ablation of the tumors, which he considers as dangerous, and which indeed is only applicable, in a word, where these tumors present a large surface. To all of these different means he prefers repeated injections of the perchloride of iron thrown into the very centre of the tumor. Without doubt this treatment has its inconveniences. After the injections we may see here and there, and now and then, very exuberant and obstinate diminutive ulcers, through which a number of clots escape—these clots due to the astringency of the perchloride. They naturally retard the cure for a long time; but the final result is none the less favorable. It may happen likewise that a phlegmasia, induced by the perchloride, terminates in suppuration, and gives rise to subsequent hemorrhage. In such an event M. Gosselin employs the white hot iron, as much with the view of arresting hemorrhage, as to complete the obliteration of the vascular tumor, and he has been successful.

Rapid Pressure Treatment of Aneurism.

In the *British Medical Journal* for October 5, 1867, p. 287, Dr. W. MURRAY, M.R.C.P. Lond., Newcastle-on-Tyne, writes a paper to prove, first, that aneurisms of the largest size

can be treated successfully by a process which is so rapid in its operation as to occupy less than an hour; and, second, that the cure takes place in these cases by coagulation of blood in the sac of the aneurism, and not, as has been hitherto believed, by the deposition of fibrine.

What is the nature of this treatment? The patient is put fully under the influence of chloroform, that we may be enabled to apply a very powerful pressing instrument on tender or sensitive parts, such as the site of the abdominal aorta. The full administration of chloroform is further necessary to relax the muscular system, which is an important condition of success, as the slightest movement of the pressing instrument by the muscular action of the parts pressed on, is fatal to this process of cure. I would draw special attention to the next part of the treatment, as success is dependent upon the care with which this is carried out. *It is the complete arrest of all movement of the blood in the aneurismal sac.* By the old method of cure, fibrine was supposed to coagulate and be deposited from the very slow, scanty, and feeble current of blood, which found its way through the sac of the aneurism while incomplete pressure was maintained. Such a current, however feeble and slow, would be absolutely fatal to the rapid treatment. Complete arrest, therefore, of a current of blood, which shall be retained in a motionless state, is the secret of success. In fact, you must do by pressure exactly what is done by the ligature when it is applied to the artery above the aneurism; and you may do even more than is done by the ligature; for Dr. O'Ferrall, of Dublin, has insisted upon the application of distal, as well as proximal pressure; and Dr. Mapother has carried out his suggestion with complete success. Aneurisms requiring pressure on the abdominal aorta are perhaps least dependent on distal pressure, as the collateral circulation to the lower parts of the body is here so limited as to render a current into the distal orifice of the aneurism improbable. In order to obtain this complete arrest of blood in the sac of the aneurism, the most careful and energetic watching of the pressing instrument is necessary. You must have so deep an interest in the treatment that you will sit for a whole hour or more, enduring the most trying strain on your muscular and nervous systems, before you can hope to obtain a cure. Your eye and hand must be continually testing the condition of the aneurismal swelling; and the faintest indication of pulsation there must be considered fatal to the process of cure, and at once remedied; in fact, the tourniquet must be so placed as not to permit a single rush of blood into the aneurism. Nothing short of this will bring about a cure in a short space of time.

We must now consider the duration of the treatment. At Newcastle, a case of aneurism of the abdominal aorta underwent the process of cure in three-quarters of an hour; and, in another case at Sunderland, under Dr. Heath's care, consolidation was distinctly observed to occur within twenty minutes. In the Newcastle case, unsuccessful efforts had been made for four hours; and, at the end of that time, the aneurism remained unchanged. As neither increase of solidity, diminished pulsation, nor decrease in size, could be detected, I determined to make a final effort. The patient being fully under the influence of chloroform, I reapplied the tourniquet, and held it firmly and securely over the aorta so as to obliterate every trace of pulsation. By a prolonged effort, three-fourths of an hour passed without a single slip of the instrument. It was then removed, and the aneurism had ceased to pulsate. A slight movement was perceptible for some time afterward; this being an impulse communicated from the pulsation of the aorta above it.

In Dr. Heath's case, the pressure had been kept up irregularly for about ten hours, when the patient fainted under the chloroform. The pressure was then removed, and the pulsation and other characters of the aneurism were found to be as bad as ever. The patient was then urged to bear a final attempt without chloroform. This he did; and, to

our amazement, when, at the end of twenty minutes, he declared he could bear the pressure no longer, we found the aneurism had become solid and had ceased to beat.

Here, then, are two cases in which the actual process of cure was brought about in less than an hour. How is this effected? We affirm by coagulation of blood in the sac of the aneurism. We believe this, because of the short time occupied in bringing about a sudden and decided change in the disease. It seems to me impossible that fibrine can be so rapidly deposited from the blood in such quantities as to fill up the cavity of a large aneurism, and to change a pulsating, thrilling, and expanding sac, into a motionless solid mass. This opinion is supported by another important fact—the large soft mass which is produced by the filling of the aneurism with solid matter disappears in a few hours. In each of the above cases, all trace of the aneurismal tumor was gone before we could obtain a plaster cast of the part. Rapidity of disappearance, then, as well as rapidity of production, is in favor of the existence of coagulation of the blood. In it we have contraction of a clot of blood inside the aneurism, by which the watery parts of the blood are squeezed out and absorbed, such as occurs in a clot of blood outside the body.

In conclusion, we may observe that the solution of fibrine in liquor sanguinis is, like all complicated natural phenomena, to be regarded as resulting from the adjustment of certain conditions to the forces by which it is maintained. When we disturb the conditions, the phenomenon ceases, to be replaced by another equally remarkable—coagulation. In fact, by substituting the conditions of coagulation for those of the solution of fibrine we cure aneurism. The day may come when even a simpler plan than pressure will effect this change; but, at present, it must be admitted that a great advance has been made in limiting the time and altering the process by which this disease may be cured.

Aneurism of the Abdominal Aorta.

Dr. EDWARD T. COSWELL, of Providence, Rhode Island, writes to the *Medical Record* for July 1st, 1867, p. 197, as follows:

In an elaborate and instructive article upon Internal Aneurism, in the *American Journal of Medical Sciences* for January, 1867, by Dr. Liddell, of New York, it is stated that abdominal aneurisms sometimes break into the left pleural cavity, and no reference is made to any other disposition above the diaphragm of the contents of the sac of an abdominal aneurism. In the following case an outlet was found into the right pleural cavity, and as the writer mentioned records no such instance, I infer that it is comparatively rare.

William A—, of about 35 years of age, and of spare habit, had been treated for some months by several physicians for complaints which had been ascribed by one to the stomach and by another to the liver. In the month of September last I was requested, about two o'clock in the morning, to visit him, the messenger stating that he was suffering from "a swelling in his stomach, which throbbed." As he resided some distance out of town, I sent him an anodyne, and promised to see him early in the morning. On arriving, I found that he had died at 7½ A.M. He had been employed as engineer on a tug-boat, and was an industrious and temperate man. I learned that he had complained while on his boat, at noon on the preceding day, of severe pain, apparently in the epigastrium, and had been put ashore. He remained until 5 P.M. near the landing, and then walked an eighth of a mile, up a hill, to his house, and then up-stairs. During the night he suffered intense pain and had, as it was stated, "two or three attacks of trembling, with stiffness of the limbs." He got but little sleep. At times he would walk up and down, in great distress, and then would lie down, but he could not remain on the bed. Ten

minutes before he died he walked across the room and conversed with members of his family.

I made an autopsy twenty-six hours after death, and the following statements are taken from my own notes and from those of Dr. Mason, who kindly assisted me :

Upon opening the thorax, blood was seen to issue from the right thoracic cavity, and when the sternum was removed, the whole cavity seemed filled with clotted blood and serum. Two quarts were removed. The lung was greatly compressed ; indeed, it seemed scarcely larger than my fist. In the posterior mediastinum, and extending down the course of the œsophagus, there was a firm clot, which passed down through the œsophageal opening in the diaphragm. The left thoracic cavity presented nothing abnormal save some old pleuritic adhesions. The heart and the pericardium were free from disease. On inspecting the abdomen, a large, firm clot was found around the posterior cardiac surface of the stomach, gluing it and the intestines together. The adjoining portions of the peritoneum were much thickened. On breaking up the clot the aneurismal sac was exposed. It was developed about the celiac axis, just above the superior mesenteric branch of the aorta, and projected from the left side of the latter. It opened into the aorta by a single mouth, three-quarters of an inch in diameter. It was composed of all the coats of the vessel and was somewhat larger than a goose-egg, having two pouches developed in its walls, the larger of which was about two inches long and one and a half inches in diameter. It was lined with several layers of lymph, and these in one portion formed a projection into the cavity—a stalagmite growth as it were—about an inch broad at its base and projecting three-quarters of an inch into the cavity. The walls of the sac were, in some places, quite thin, and the rupture had taken place in its upper or diaphragmatic portion. Being unable to rupture the peritoneum, the blood had found a way for itself through the connective tissue, along the fibre of the œsophagus ; thus passing up into the posterior mediastinum, had found some weak spot in the right pleura and poured itself out, as I have stated, into the right thoracic cavity. The aorta was atheromatous, and deposits of a similar nature could be felt in the radial artery on both sides ; portions of the aneurismal one were also found in a like condition.

New Mode of Treating Umbilical Hernia of Infants.

Dr. A. G. FIELD, of Iowa, writes to the *Medical Record* (September 16th, 1867, p. 316), as follows :

In the treatment of a case of umbilical hernia in an infant, some time since, I experienced but little benefit from the usual appliances, and finally resorted to the use of adhesive strips only, with which a radical cure was effected.

Since then, the plan has been adopted with success in the treatment of other cases, and its simplicity may justify its publicity, and induce others to give it a trial. It is based upon the assumption that there are two indications to be met : the support of the parietes of the abdomen, and the production of a plastic exudation at the point of injury.

Two strips of adhesive plaster of sufficient length are to be applied to the abdomen, each reaching from the crest of the ilium on one side to the hypochondrium on the other ; both crossing over the umbilicus. In the application of each, the umbilicus is to be pressed well down by the finger of the surgeon, while the strip of plaster, one end of which having been previously attached, is drawn firmly over it, and secured, so as to cause an inward fold of the integument at the point of injury, thus closing the aperture, and at the same time constituting a *pad* of the corrugated tissues of the abdominal wall.

By reapplying the strips when they became loosened, and continuing the treatment a few weeks, radical cures resulted.

Paralysis of the Radial Nerve by the Pressure of Crutches.

Prof. THEODORE BILLROTH gives a case of this kind in the *Wiener Med. Wochenschrift*, August 28th, 1867. The patient had been previously admitted with fracture of the leg, and on account of want of room was discharged while still unable to walk except with the aid of crutches. A few days afterward he discovered a weakness in the muscles of the hand, which gradually increased to such a degree that he was unable to grasp the crutches. On readmission, the patient can flex the forearm, but the hands are quite useless. The extensors of the fingers do not respond to the will. It is evident that the radial nerve on both sides is paralyzed. There is a slight amount of control remaining over the flexor muscles, more upon the right than upon the left arm. The thumb can be flexed and abducted, the fingers respond somewhat slower to the impulse of the will: from this it appears that all the nerves of the arm are more or less impaired, while the radial is wholly paralyzed. The cause of this is undoubtedly the pressure which has been produced in the axilla by the crutches. A second case of this kind was observed by the professor, about a year ago, in a case of fracture of the leg. After healing of the fracture, the patient had scarcely used crutches for ten days before he was taken with partial paralysis of the left radial nerve. A cure was effected in a few weeks by the application of electricity. It must appear somewhat singular that this paralysis occurs but rarely, and invariably in persons who have used crutches but for a short time. This is explainable from the fact that the paralysis usually occurs in strong, heavy individuals, and first begins on the side corresponding to the weak or injured limb. People beginning to walk on crutches usually allow the whole weight to hang as it were on the top of the crutch, instead of partially taking off the pressure by the use of the arms. This is, of course, favorable to the production of paralysis, and the radial nerve being nearly in the centre of the axilla, is more likely to be pressed against the head of the humerus. Another point in this case worthy of note is the fact that *sensibility* is but little impaired. The sense of feeling is almost perfect. We would hardly expect this result, as nearly all the nervous branches going to the arm are of a mixed nature, containing both motor and sensory fibres; pressure, therefore, should produce both loss of sensation and motion. But since this is not the case, the fact is established that the motor fibres, under a given amount of pressure, lose their function much easier than the sensory.

Post-mortem Evidence of Recovery after Rupture of the Diaphragm.

Prof. JOS. ENGEL, of Vienna, in the *Wiener Med. Wochenschrift*, 12th June, 1867, reports the case of a clergyman, 67 years of age, examined in the Institution for Pathological Anatomy. On the right side of the chest there was found a healed fracture of the ribs, beginning near the anterior extremity of the seventh rib, and ending at the fifth. There was no scar upon the skin.

On the superior portion of the liver, near the right side of the suspensory ligament, near its centre, the liver substance formed a perpendicular process, running superiorly, of a cylindrical form, and the end rounded off. Its height was five centimetres, and its circumference fourteen centimetres. This fitted exactly into a sac of peritoneum, which penetrated the diaphragm at the anterior portion of the tendinous part. It was united to the base of the lung by adhesions, forming a complete hernial sac, containing a portion of liver. The liver was adherent to the diaphragm in several places. The right lung was

adherent to the diaphragm throughout its whole extent. Concerning the nature or time of the injury nothing could be ascertained.

Traumatic Tetanus.

Dr. MORBITZ SPITZER, in the *Wiener Med. Wochenschrift* (June 15th, 1867), reviews this subject, and comes to the following conclusions :

Traumatic tetanus is a curable disease. It consists essentially in a reflex action called forth by abnormal irritation of a peripheral nerve, independent of any toxical influence.

In the treatment the main point is to remove the injured part or irritating cause as speedily as possible.

Dr. Spitzer then alludes to the generally unsuccessful results obtained by medical means, and again insists upon surgical means for the removal of the irritating cause or part injured rather than depend upon the uncertain action of medicines. He makes, in speaking of powerful medical remedies which have been recently used, no allusion to the extract of the calabar bean which has lately been given with successful results in a number of cases of traumatic tetanus.

Treatment of Acute Inflammations affecting Extremities by Ligation of the Supplying Artery.

It is reported in the *Lancet* (June 15th, 1867), that, at the London Hospital, a case of acute inflammation in and about the knee-joint of a male adult who had sustained a lacerated wound of the joint, has been treated (at the suggestion of Mr. Maunder) by ligation of the femoral artery, with a view to modify the inflammatory action.

Thirty days have elapsed since Mr. Little applied the ligature at the apex of Scarpa's triangle, and the case has hitherto progressed most satisfactorily.

Mr. Maunder proposes also to ligature the brachial artery in cases of acute inflammation of the palm of the hand. The operation was performed on the 13th of May.

Acupressure.

WILLIAM PIRRIE, M.D., Professor of Surgery in the University of Aberdeen, gives, in the *British Medical Journal* for August 31st, 1867, p. 173, a synopsis of his experience of acupressure. He says :

My experience of acupressure in important cases, of which records have been kept, comprehends its use in eleven cases of amputation of thigh; four of amputation of leg; two of amputation of arm at the upper part of the surgical neck of the humerus; one of amputation at ankle-joint; one of Chopart's amputation; two of amputation of the whole of great toe; twelve of excision of mamma; six of excision of elbow-joint; one of excision of knee-joint; one of excision of an erectile tumor; one of excision of tumor on chest; one of excision of tumor on thigh—wound eight inches long; one of excision of head of fibula; three of excision of testicle; one of hemorrhage from sloughing of hand; one of wound of hand; one of wound of upper part of forearm, with great hemorrhage; one of wound of the radial artery; and one of wound of hand, attended with great hemorrhage.

These fifty-one cases—in which alone I have acupressed one hundred and eighty-five vessels—are of a highly diversified character, and many of them are among the most important in the practice of surgery. They are admirably fitted to test the efficiency of

acupressure, and to enable a surgeon to form a just appreciation of its merits. I have also employed this means of arresting hemorrhage in a large number of minor operations, as well as in many cases of wounds which occurred both in hospital and in private practice, but which I did not deem sufficiently important to put on record. My able colleague, Dr. Keith, acupressed the first case in the Aberdeen Hospital, and I acupressed the second. I have had occasion to assist Dr. Keith in all his hospital operations, and thus had ample opportunity of forming a correct appreciation of the value of acupressure in his cases as well as in my own. I have also assisted Dr. Fiddes in his operations; who, like Dr. Keith and myself, invariably practises acupressure. Such have been my opportunities of arriving at a just estimation of the merits of acupressure.

Neuralgia produced by a Fatty Tumor.

At a meeting of the Chicago Medical Society (*Chicago Medical Journal*, October, 1867, p. 473), Dr. FISHER exhibited a large fatty tumor, which he had removed from a male patient 50 years of age. The tumor, situated between the upper portion of the left scapula and spine, was first observed seven years ago. The growth increased very slowly in size, giving the patient scarcely any inconvenience, till about four years ago, when quite severe neuralgic pain was experienced in the left arm and side, and under the scapula. It was for this pain, especially, that the patient sought surgical aid.

The removal of the tumor, which was attended with considerable difficulty, in consequence of its very deep attachments with the facial and transverse spinal processes, relieved the pain.

Plaster of Paris Splints.

Dr. JAMES L. LITTLE, of New York, in his "Report on the Use of Plaster of Paris in Surgery," published in the *Transactions of the American Medical Association* for 1867, gives full information on this subject, accompanied by illustrative wood-cuts. With the exception of the last campaign in the Shenandoah Valley, the *Stucco* bandage was little or not at all resorted to during our late war, which is somewhat strange, as the favorable experience during the Schleswig-Holstein war of 1848-9, and again in 1863-4, had long been brought to notice.

II. MECHANICAL SURGERY.

New Invalid Bed.

In the *British Medical Journal* for July 27th, 1867, p. 64, there is a description of a new invalid bed, admitting of a much greater variety of movements than any of those at present in use. It was devised by Mr. HERBERT SPENCER, the distinguished biologist and philosophical writer. He has refrained from patenting it, not wishing to place any obstacle in the way of its general use. It is on view at the establishment of Mr. Ward, the invalid-chair maker, Leicester Square, London.

Wilde's Bullet Detector.

A very ingenious piece of mechanism for the detection and extraction of bullets in wounds has been devised by Mr. SYLVAN DE WILDE (*Medical Times and Gazette*).

It seems that at the time Garibaldi was suffering from the effects of an undetected bullet in his limb, and pained by the fruitless efforts of operators to detect it, it occurred to several individuals of a philosophic turn of mind that electricity might very well be employed in the detection of metallic substances lodged within the human tissues. In France, M. Edmond Langlois, M. Favre, and Dr. Lecompte, of the French Army Medical School at Val-de-Grâce, assisted by M. Rhumkoff, all made use of it in the elaboration of suggestions on the point. There is this manifest advantage, that the structures of the body are non-conductive—a fact that renders the action of the electric current more perfect.

Mr. De Wilde has apparently produced the most practical result; and his instruments have been submitted to the naval and military authorities, who have made a complimentary report about them. The apparatus consists of a probe and forceps, a battery, and an alarm, contained in a box eleven inches long by three broad, and two inches and a half deep. The elements for the generation of a current, which remains constant for some weeks, are zinc and carbon. The probe, consisting of two steel wires, insulated from each other, is connected with an electric horseshoe magnet and a bell, and when (introduced into the wound) it touches the bullet, the circle is completed, and the bell rings. The forceps act on the same principle, and are intended first to detect, then to seize the bullet. They have curved points, and not pallets or spoons. The points of the probe are kept sheathed on introduction to the wound, and not uncovered till the supposed bullet is felt. This is effected by means of a sliding tube. The advantages of Mr. De Wilde's probe over others of its kind are very marked; and the army and navy officers will, no doubt, find it a great aid. The probe is a sensitive artificial finger, which enters deeply into the tissues, and gives the signal at once when it detects the hidden source of mischief below.

Gas-Cautery of Nelaton.

In the *British Medical Journal* for August 10th, 1867, p. 108, Mr. HOLMES COOTE, surgeon to St. Bartholomew's Hospital, London, calls attention to the use of the gas-cautery in the treatment of cancerous ulcerations of the skin:

The gas-cautery possesses these advantages: it chars the surfaces acted on to any amount, and the pain soon subsides when the flame is removed; unlike the action of the Vienna paste, the chloride of zinc, &c., the action is very speedy, and seems to exert a marked influence in arresting the progress of the cancerous ulceration; the destruction of the cancerous surface is followed, after each application, by a most marked contraction and diminution of size, and this contraction seems the first stage towards recovery.

The use of the gas-flame is best where a general and powerful effect is required. Mr. Bruce's platinum point is useful where a limited and delicate application of the cautery is indicated, such as in operations about the eyelids.

New Form of Endoscope.

In the *British Medical Journal* of Aug. 17th, 1867, Dr. R. ARCHER WARWICK, of Richmond, S. W., proposes a new form of endoscope, of which the following is a representation. He says:

My instrument consists of a brass tube of the simple endoscopic construction, about four inches and a half in length and one in diameter. A Ramsden eye-piece, consisting of two plano-convex lenses, with a magnifying power of about two and a half times, and capable of adjustment for distinct vision, is fitted to one end of this tube, and the eye-

piece is so constructed as to admit of the insertion of a spectacle lens, to suit the eye of those who require the aid of glasses. An adapter in the form of a cone, and blackened inside, is attached to the other end of the instrument, to receive the various silver tubes required for the examination of the organs and passages to be explored. Midway between the two extremities of the tube is an aperture nearly one inch in diameter, into which is fitted a metal cone, two and a half inches long, and three inches in diameter at its base. This cone is plated with silver on its inner surface, and highly polished. A large double convex lens of short focus is adapted to its base, so that light of an inferior quality or intensity may be condensed and rendered sufficient for the use of the instrument. The silver tubes for the urethra are similar to those used with Dr. Cruise's instrument; they are highly polished on the inside, and correspond in size to Nos. 8, 10, and 12, of the ordinary catheter gauge. The tube used for the bladder resembles a catheter with a short curve, and allows a portion of the bladder, to the extent of nearly half an inch in length, to be seen, through an aperture filled in with glass. The endoscope I have had constructed will show an object with a north light more distinctly than Dr. Cruise's does with an artificial light, and the object is seen from eight to ten times more distinctly with a similar artificial light; it is also available for the examination of other organs, as is the case with Dr. Cruise's. Referring to the advantages of the endoscope, he says: "The utility of the endoscope is not, however, confined to the diagnosis and treatment of diseases of the urethra—far otherwise. There is no portion of the human body into which a straight tube can be introduced, in which it will not be found of service. With it the interior of the bladder may be thoroughly investigated; tumors, ulcerations, and sacculi recognized; calculi examined, and information gained as to their size, figure, number, position, whether encysted or loose, and so on. The rectum, beyond the reach of the finger and speculum, can be searched for ulcerations, constrictions, tumors, &c. The cavity of the uterus can be demonstrated; so also the auditory meatus, nasal fossæ, pharynx, larynx, and, I should even hope, œsophagus and stomach. Likewise wounds, especially those suspected to contain foreign bodies, abscesses, the cavity of ovarian cysts after tapping, and so on. I have been enabled by the endoscope to obtain so clear a view of the interior of the uterus that I am satisfied it will prove most useful for the diagnosis of small polypi, granular and follicular ulcerations, and other affections, which at present are subjects of conjecture rather than positive knowledge."

III. MILITARY SURGERY.

On the Progress of, and Errors in Military Surgery.

By W. ROSER, M.D., Professor of Surgery in Marburg. (Sieben Abhandlungen über Fortschritte und Verirrung der Kriegschirurgie.) Reprint, 8vo, p. 34. Berlin, Hirschwald, June, 1867.

Under the title "Seven Discussions on the Progress and Errors in Military Surgery," Professor Roser has published a series of valuable critical observations on the principal operations in army practice, in which he has cast a retrospective glance at some of the false views and principles which still exert a bad influence, as well as at the progress which was instrumental in putting aside these errors. In taking up the subjects seriatim, we shall endeavor to acquaint our readers briefly with some of Professor Roser's views.

1. *Extraction of Balls.*—Dr. Roser protests against the practice of early searching

for and extracting balls. Their presence, with a few exceptions, forms an important part of the pathological process, and their early removal is never urgently demanded, unless to prevent protracted suppuration, or put an end to or avert a threatening abscess. If seated just beneath the skin or in the superficial muscles, they are often overlooked, and only discovered after the lapse of a few days or weeks. In these cases it is much better to wait until they are loosened by suppuration, except when particles of clothing, which are liable to excite acute and putrefactive suppuration, are carried in. When the ball has penetrated so deeply that it cannot be felt with the finger, it must be let alone until inflammatory induration and the formation of an abscess point to its exact locality. Early interference here is not only painful, but the wound is unnecessarily irritated; decomposition is favored by the entrance of air; and the efforts at extraction, which are often accomplished at the expense of rude incisions or laceration of the muscular fibres, are frequently fruitless. Even when the bones are injured no good can result from primary extraction. If the bone-wound is trifling, the ball is probably flattened, and its presence does not complicate the case. Should the bone be shattered, or a joint opened, early efforts at extracting the ball can be productive of no good result, since it does not do away with the dangers of the individual case. Finally, and to this objection alone, the compiler gives his full acquiescence, on the field of battle precious time is consumed, and other wounded, who are more in need of surgical aid, are liable to be neglected, if not overlooked, and the surgeon, worn out by previous labor, is too apt to hurry through operations, which should not have been undertaken without due thought and discrimination.

2. *Ligation of Arteries.*—When an artery has been wounded, Dr. Roser opposes the too common practice of ligating the principal arterial trunk on its proximal side for the arrest of the hemorrhage; preferring in all instances to cut down upon the vessel at the site of the injury and throw two threads around it. It is astonishing that any surgeon at the present day should advocate the former procedure, which should be classed among the exploded practices in surgery. And yet we find that Dr. Neudörfer, one of the most recent authors on military surgery, condemns ligation in the wound itself, and holds that, on account of the infiltration of blood, the normal relations of the tissues are so changed that they can scarcely be distinguished from each other, and that seeking for the injured vessel is, therefore a random procedure, and should be abandoned for ligation higher up. These pernicious doctrines are ably refuted by Dr. Roser, who, moreover, states that he has never failed to discover the wounded artery and apply direct ligatures. In this way he has succeeded in tying the upper third of the femoral, the anterior tibial high up, the brachial at the bend of the arm, the ulnar artery at its upper portion, the palmar arch in five instances, as well as the anterior and posterior tibials and the fibular artery near the ankle-joint.

3. *Débridement.*—A few years ago the French surgeons strenuously advocated the free incision and dilatation, or débridement, of all gunshot wounds as soon as possible after their infliction, on the ground that it converted a contused lacerated wound into a simple wound, and prevented inflammatory tension, the infiltration and burrowing of fluids, and the consequent destruction of tissues. This doctrine, however, soon fell into disrepute, and the other extreme prevailed; so that incisions and dilatations of the orifices were withheld when the inflammatory tension urgently called for them.

Professor Roser would restrict the operation to those cases in which the severity of the inflammation has occasioned unhealthy suppuration, and the circulation of the parts is interfered with by the compression of the deep-seated veins. Under these circumstances, free incision through the aponeuroses, and even the muscles, by giving ready exit to the pent-up fluids, diminishes the chances of septicæmia, and, by freeing the intra-fascial

strangulation, prevents the destruction of tissues, and the burrowing of fluids. When the strangulation is excessive, great care must be exercised in the application of rollers. The deep-seated veins being compressed, it is highly important that the circulation of the superficial veins be not interfered with. The plaster of Paris, or other immovable apparatus, must, therefore, be avoided, since their application will not only favor the absorption of septic fluids, but excite gangrene.

4. *The Conservative Treatment of Gunshot Fractures.*—Professor Roser justly accredits to Malgaigne the high honor of having been the first surgeon who advocated attempts at preservation of the limb, in preference to amputation, when the femur was the seat of gunshot fracture; and it is interesting to note that he was sustained in his opinion by only two professors of the Paris faculty, namely, Marjolin and Jobert. In reviewing the cases which have induced the more modern surgeons to follow the advice of the older writers, to amputate in all cases of this nature, Dr. Roser insists that the conservative treatment of these injuries has never had fair play, for the reasons that it was rarely attempted, was not properly carried out, or the treatment was conducted in hospitals, the atmosphere of which was contaminated by noxious emanations.

The experience of the past ten years has proved the fallacy of the views of the older writers in advising immediate ablation of the limb, and our author arrays himself with the modern surgeons who protest against it. With respect to the proper apparatus to be applied, he gives the gypsum bandage the preference, as affording the safest means for transportation; but insists that its continuous use endangers the limb by interfering with its proper circulation, and favors purulent absorption, in the event of considerable effusion of blood or collection of pus beneath the fascia lata, or in the deep connective tissues. A great defect in all forms of apparatus, to which he calls attention, is, that the nearest joint is not included in such a way as to guard it against changes in position. In fractures of the thigh, for example, the hip-joint, and in fractures of the leg, the ankle-joint, are not properly fixed.

5. *Extraction of Spiculæ.*—He denies that a wound is simplified by the early removal of splinters of bone, and contends that the efforts made in this direction are productive of much mischief, and, in reality, complicate, rather than simplify, the injury. By permitting the spiculæ to remain for a few days until they have become loosened by suppuration no harm results. Removing the splinters necessitates large incisions; occasions renewed hemorrhage; admits of the free entrance of air to the bruised tissues and the extravasated blood, and thereby favors decomposition and septicæmia. If they lie loose in the vicinity of the wound, and can readily be discovered and reached beneath the integuments, their removal is justifiable. On the other hand, when small fragments are driven into the muscles, it is scarcely possible to find or reach them all, and when the spiculæ are large, and adhere to the tendons and muscles, a formal operation is required for their extraction, which should not be lightly undertaken.

The question is very different when suppuration has set in. The previously impacted spiculæ are more or less free, and act as foreign bodies in maintaining suppuration and preventing cicatrization. They may, moreover, excite hemorrhage, and, by furnishing unhealthy pus, favor decomposition of the secretions of the wound. Under these circumstances, they must be got rid of, by enlarging the previous opening, either by the knife, or by means of dilating tents.

6. *Excision of Joints.*—The leading principles which call for traumatic excision of joints are the prevention or limiting of putrefaction and septicæmia, indications which have been overlooked, or not clearly recognized by military surgeons. A comminuted joint, complicated, possibly by the presence of a ball or fragments of clothing, must of necessity

become the seat of fetid suppuration, and if the patient do not die from acute septicæmia, he is subjected to the dangers of chronic and exhausting suppuration. The porous spiculæ, or dead sequestra, are little disposed to effect spontaneous discharge, and they not only keep up the discharge, but, by rendering the latter foul and fetid, dispose to blood-poisoning consequent on its absorption. In addition to these dangers, the patient, treated in a military hospital, is exposed to miasmatic pyæmia. Through excision, the pus obtains a free outlet, the splinters are easily extracted, sequestra find a ready means of egress, and the conditions of septicæmia are diminished or removed.

Primary excision is indicated when there is reason to believe, from the nature and extent of the wound, that acute, foul suppuration may be expected. Late excision should be practised when the inflammation has been chronic, and healing is delayed by apiculæ, necrosis, or caries; and intermediate excision is called for when the corrupted discharges dispose to septic fever.

Partial excisions are held by Professor Roser to be always preferable, on the ground that the dangers of purulent absorption are greatly diminished by the smaller size of the wounds of the soft parts and the bones. In the first Schleswig-Holstein campaigns, Stromeyer recognized the correctness of this view, since of thirty-eight elbow-resections, thirty were incomplete and only eight total. The same principle should be applied to the knee, and it is interesting to note that the first successful case of excision of this joint was a partial operation, the head of the tibia alone having been removed.

7. *Amputations.*—The chief reason for amputating shattered limbs is to avoid septicæmia, or to cut off the sources of blood-poisoning by removing unhealthy suppurating tissues. Cases often arise in which septic symptoms set in in consequence of primary amputation having been neglected, and the surgeon is in doubt whether the limb should be removed as a means of cutting short the symptoms, or whether it will be better to wait until the first stage of the acute septicæmia is safely passed through, and the blood of the patient resumes its normal properties. The solution of this question is not easy, nor does the surgeon derive any particular benefit from consulting his text-books, for the reasons that the subject has been but little treated of, but more particularly because it has only recently been recognized that surgical fever depends upon the absorption of the products of decomposition of the secretions of wounds, and not upon sympathy, as formerly taught. The views of Professor Roser on the bearings of amputation to septicæmia may be summed up as follows:

1. The chief object of early amputation is to avoid or limit as much as possible septicæmia, the formation of a better covering for the wound, or the attainment of a smaller and simpler surface being of secondary importance.

2. The avoidance of septicæmia is equally the motive for late amputation, since when the case has become chronic, absorption from decomposed discharges is still going on, and its source should be removed.

3. In most cases of crushing of limbs, with slight or no wound of the integuments, and consequently no issue for the products of decomposition, there is acute septic infiltration of the cellular tissue, in which the infection of the connective tissue rapidly spreads from mesh to mesh, a process analogous to the progress of emphysema, and which is necessarily fatal unless amputation be resorted to. The danger here is very great; and it is, therefore, highly important to distinguish this septic infiltration from the more circumscribed putrefaction of the cellular tissue.

4. Many cases of acute traumatic gangrene, or acute traumatic putrefaction, are complicated with so diffused a decomposition of the surface of the wound, that a proportionate resorption of putrid matters is to be feared. The more this is the case, the more deter-

mined and prompt should be the resort to amputation. There is no time to wait until inflammation and fever abate, the surface of the wound becomes cleaner, or the gangrene is limited. The majority of such cases perish in consequence of the delay.

5. When the putrid surface of the wound is not very large, and the sequestral inflammation has set in, and there is, therefore, hope that the patient will soon safely pass through the septic traumatic fever, in consequence of the putrid resorption being about to diminish or cease, amputation may be delayed until this first stage is passed.

According to the present state of our knowledge, no precise plan of treatment can be laid down, when septic fever is combined with zymotic pyæmia. Professor Roser is convinced that all, or nearly all of the successful amputations after the access of pyæmic symptoms were merely cases in which the specific pyæmic fever had run its course, and only one of its remaining putrefactive or suppurative products remained.

To the question, At what point, or how high above the seat of the injury shall amputation be performed? the answer at the present time is to save as much as possible. Whatever appears to interfere with the healing process, or substantially adds to the dangers of septicæmia, must be removed; but tissues infiltrated with blood, or inflamed and suppurating tissues, fistulous opening, or the openings made by the projectile, must not necessarily be sacrificed.

A Report on the Use of Plaster of Paris in Surgery.

By JAMES L. LITTLE, M.D., of New York (Transactions of the American Medical Association. Philadelphia, 1867).

In this report, which is not strictly confined to the use of the gypsum bandage in cases of gunshot fractures, the advantages and mode of applying the apparatus to special fractures are fully discussed and described. The only peculiarity in the dressing consists in applying the dressing in one piece, so as to make a partial casing for the limb, which is retained and caused to fit accurately by a roller bandage. Two thicknesses of bleached cotton flannel make the best kind of splints. The cloth is to be immersed in the solution until it is thoroughly saturated, when it is laid on a flat surface, as a table, and smoothed out with the hand, in order to remove any irregularities from its surface, and then applied to the limb, and confined by a roller.

This form of dressing was not used to any great extent during our late war, so that its merits were not fully tested.

The history of the introduction and uses of the plaster of Paris bandage in surgery is very incompletely given by Dr. Little; nor does he seem to be aware of the great advances made in its application to army practice by Pirogoff, Neudörfer, and the surgeons of the second Schleswig-Holstein campaign.

The following papers refer to amputations and excisions.

Hip-joint Amputations in the late War in the United States.

By Assistant Surgeon and Brevet Lieutenant-Colonel GEORGE A. OTIS, U. S. Army (Extract from Circular No. 7, issued from the office of the Surgeon-General U. S. Army, July 1st, 1867, and entitled "A Report on Amputations at the Hip-joint in Military Surgery." Washington: Government Printing Office, 1867.)

During the late war in the United States, there occurred 53 authenticated cases of amputations at the hip-joint, 34 of which were performed in the armies of the United States, and 19 in the Confederate armies. These operations are divided into four separate classes: primary, intermediate, and secondary amputations, and re-amputations. The

primary cases are limited to those performed within twenty hours after the infliction of the injury. In the class of secondary amputations are included those practised during the persistence of the inflammatory stage, a period varying between the day after the reception of the wound and some time in the second or third month. The secondary disarticulations comprise those performed at a period when the inflammation had abated, excluding those cases in which previous amputation in the continuity of the thigh had been performed, which are termed re-amputations.

Primary amputations include 19 cases. Of these, 11 succumbed to the direct shock of the operation, the subjects surviving from half an hour to ten hours; 3 lingered for two days, and 2 for eight and ten days; 1 has survived the operation for over four years, and is now in excellent health; and 2 so far recovered that they were known to be in good condition, in the one two months, and in the other six months from the dates at which the operations were performed. Including these latter cases, the percentage of mortality in the primary amputations was 84.21; excluding them, the mortality rate is increased to 94.73.

Intermediate amputations were performed eighteen times, and all were fatal. The interval from the reception of the injury to the date of the operation varied from twenty-four hours to one month; the mean length was a little over ten days. The patient who survived the procedure the longest lived only eight days.

Secondary amputations comprise 9 cases, of which 7 died, a percentage of mortality of 77.78. The shortest interval between the date of the injury was forty-three days; the longest was two years, nine months, and twenty-one days; and the average interval was four hundred and twenty-nine days.

Re-amputations were practised in 7 instances, of which 3 were fatal, thus affording the low mortality rate of 42.85, and showing that the procedure is comparatively a safe one. In six of the cases the antecedent amputations were performed at the lower third of the thigh on account of gunshot injuries of the knee-joint in five, and bayonet thrust of the knee in one, and in one the disarticulation was subsequent to an amputation at the upper third for comminuted fracture of the shaft of the femur.

A *résumé* of the foregoing facts shows that amputation at the hip was performed during our late war in 53 cases, of which 7 recovered, 2 are doubtful, and 44 died. Excluding the doubtful cases, the mortality of the procedure was 86.27 per cent.; including them, it was 83.01 per cent.

Fourteen of the operations were done for injuries produced by cannon-shot; thirty-eight for wounds inflicted by small-arm projectiles, and one for complications following a bayonet thrust of the knee-joint. Of the thirty-eight cases rendering operation necessary for wounds produced by small arms; in thirty, the missiles were conoidal musket-balls; in four, musket-balls of undescribed shapes; in one case, the large round ball with buckshot; and in three, pistol-balls.

Statistics of Excisions of the Hip-joint in the late War in the United States.

By PAUL F. EVE, M.D., Professor of Surgery in the University of Nashville. (Extract from a paper entitled "A Contribution to the History of Hip-joint Operations performed during the late Civil War; being the Statistics of Twenty Cases of Amputations and Thirteen of Resections at this Articulation in the Southern Service." Transactions of the American Medical Association, vol. xviii, p. 249. Philadelphia, 1867.)

The cases of disarticulations at the hip collected by Dr. Eve are excluded in the report of Assistant Surgeon Otis, so that we merely refer to the paper with a view to present our

readers with the statistics of excision of the hip as performed in both armies during the late war.

The cases narrated by Dr. Eve, along with those previously reported in Circular No. 6, Surgeon-General's Office, show that the head of the femur was excised forty-one times, three doubtful or uncertain cases being excluded. Of these, 6 recovered, and 35 died, thus affording a mortality of 85.36 per cent., or nearly one per cent. less than that of disarticulation at the hip. So far as can be ascertained, 7 operations were primary, all of which were fatal, and 28 were secondary, of which 6 recovered. The successful operators were Smith, Asch, and Mursick, U. S. Army; and Reed, Miltenburger, and Avent, C. S. Army.

Case of Artificial Joint of the Right Elbow, with Complete Restoration of its Natural Uses.

Reported by E. M. PENDLETON, M.D., of Sparta, Ga. (South. Journ. Med. Sciences, August, 1867, p. 252).

A private of the 59th Regt. Ga. Vols., was wounded by a minié ball in the right elbow, on the first day of the battle of Spottsylvania Court-house. Dr. Harris, the regimental surgeon, says that the head of the ulna and one condyle of the humerus were terribly shattered, for which he performed complete resection, by an H eversion. The condition of the limb in April, 1867, is thus described by Dr. Pendleton: "The arm is about three inches shorter than the other, and, having no back support, it can be turned with equal facility in any direction, but so powerful have the muscles become that, from constant use, he can hold considerable weight with the arm at a right angle with the body. He can twirl the forearm around like a wheel, as if on an axis; can strike a blow with as much force as formerly, and perform all other functions and movements of the arm about as well as ever, with the exception of rotation and pushing directly forward, or holding a weight perpendicularly above his head. In that case the heads of the bones of the forearm have to slip back several inches below that of the arm before he can poise any weight. This, however, produces but little pain or inconvenience."

Gunshot Wound in the Back—Bullet passed by Rectum Twenty-four Hours after.

Henry Lee, colored, aged about 18 years, was admitted on the 22d of December, 1866, with a gunshot wound in the back.

Dr. WM. F. TIBBALS, who attended this boy previous to his admission, gives the following history of the case: "He was wounded about 6 o'clock A.M., December 21st, 1866, while endeavoring to escape arrest. He says that he was running up the bank of the river, and that the watchman was close upon him when he fired. The ball took effect to the right and between the second and third lumbar vertebræ; glancing over the transverse process it entered the alimentary canal, and was passed with his fæces early on the morning of the 22d, about twenty-four hours after its reception."

This patient, when admitted, was suffering no pain or inconvenience, and remained in this condition during his stay in the hospital. The examination of the wound by Dr. Dawson, confirmed the account given by Dr. Tibbals. The ball, in passing the transverse process, carried away its periosteum, leaving the bone bare, and entered, no doubt, the transverse portion of the duodenum, where this division of the bowel is uncovered by peritoneum.—*Cincinnati Lancet and Observer*, November, 1867.

Gunshot Injury of the Chest.

JOHN E. ERICHSEN, Esq., Senior Surgeon to University College Hospital, Holme Professor of Clinical Surgery, University College, &c., reports in the *British Medical Journal* for October 19th, 1867, p. 329, a case of great professional interest :

Edwin McDonnell, aged 23, was admitted into the hospital a little before two on the morning of September 28th, having been shot in the chest about half an hour before. On admission, he was cold and pale; countenance somewhat anxious; pulse 136, weak and small.

On examination by the house-surgeon, a small circular wound, about one-third of an inch in diameter, was found close by the edge of the sternum, and just below the fifth costal cartilage. The wound was cleanly cut; the edges were very slightly depressed. A second wound was also found at the back of his chest, on the same side, somewhat higher than the one in front and farther out, being just outside the inferior angle of the scapula. The size of this wound was slightly larger than that in front, and its edges were a little everted.

His clothes were found perforated in front, but not behind; and, during their removal, the bullet fell to the ground. It was conical in shape, and about one-third of an inch in diameter. There was no hemorrhage; and, from the condition of the man's clothes, not more than an ounce of blood had escaped externally. He was placed on the injured side, and covered with blankets.

Mr. Heath (who was summoned in the absence of Mr. Erichsen) inserted a probe into the anterior wound, to ascertain that the track of the ball was not subcutaneous. Soon afterwards some air was seen to bubble out of the wound.

The patient complained of pain on movement and on drawing his breath. There was no cough, nor expectoration. The injured side was resonant on percussion; the breath-sounds were weak.

A pad of lint was placed over each aperture, and a broad piece of strapping applied over the pads from the spine to the sternum. An opiate was administered, and only ice and cold milk allowed.

During the day the patient did well in every respect, with the exception of a slight draining of blood, which took place from the anterior aperture, but which was easily arrested. The pulse ranged from 100 to 108; no cough. The pain became less severe.

September 29th. The patient was not quite so well. His face was flushed; skin hot. Respiration 40. Pulse 100. There was slight working of the *alæ nasi*. About two tablespoonfuls of dark, bloody, viscid matter were coughed up. Dr. Wilson Fox examined the chest, and found the resonance tympanitic, with considerable resonance over the upper part of the thorax, above the fourth rib. Below that, and in the axillary region, it was dull. The respiration above the fourth rib was bronchial; below, it was very weak and distant. In the upper axillary region it was high-pitched and distant, with an occasional moist *râle*. In the lower axillary region it was almost suppressed, slightly jerking, and attended with a little indistinct friction. Vocal fremitus and vocal resonance were suppressed over the right front of the chest.

September 30th. The patient had passed a comfortable night. He had coughed up about half an ounce of bloody matter, and felt as though he could bring up more, but the pain stopped him. Skin cool; pulse 92. Respirations 28. The line of dullness had risen to the third rib.

October 1st. The symptoms were unchanged. He had expectorated about an ounce of

the same dark sputum. Pulse 112. Respiration 34. In the evening the tongue was slightly furred, and the skin hot.

October 2d. The skin was cooler. The bowels had been opened by an enema. The sputum and dulness were unchanged. The breath-sounds were less distinct. He had more pain about the wound. There was slight working of the *alæ nasi*. Pulse 108. Respiration 38. He was ordered a teaspoonful of brandy every two hours. Towards evening there was some restlessness and sweating.

October 3d. He had passed a bad night. Pulse 132. Respiration 44. The physical signs were the same. He vomited once during the afternoon. Towards evening his face was covered with a cold sweat; the expression of countenance was anxious. Pulse 110. Respiration 48.

October 4th. He had passed a calmer and comfortable night; but the sweating still continued. The expectoration was more tenacious, still bloody. Respiration 34. Pulse 130. Soon after 10 A.M., a change for the worse took place; the sweating became more profuse; and, although brandy was frequently administered, he rapidly sank.

POST-MORTEM EXAMINATION, twenty-four hours after death. The appearance of the body was greatly changed; the whole of the subcutaneous cellular tissue having become emphysematous, although during life not a trace of emphysema could be found. On removing the sternum, the cavity of the right pleura was found to contain three pints of a dark, bloody fluid, evidently a mixture of blood and serum; some masses of lymph were floating in it, as well as a few clots of blood. The surface of the pleura was found to be covered with a soft spongy layer of fibrine, and adhesions had formed in several places. One of these existed a little above the wound, at the place where breathing had been heard during life. On tracing the path of the bullet, it was found to have perforated the anterior wall of the thorax, below the cartilage of the fifth rib, and close to the right border of the sternum, and, having passed through the base of the right lung, to have made its exit through the fifth interspace, externally to the angle of the scapula, the ribs having escaped injury. The apertures were almost occluded by the inflammatory products thrown out. The pulmonary tissue adjacent to the track of the bullet presented the appearance of a mass of coagulated blood, the surface of the wound being irregular, and almost uniformly black. The base of the left lung was much congested. Very little fluid was found in the left pleura. When the pericardium was opened, about an ounce of dark-colored fluid escaped, in which were found floating a few masses of lymph; and some adhesions had taken place at the posterior part.

That is a brief summary of this poor fellow's case; and you will see that the most important points are these: He was shot right through the chest and through the lung. Notwithstanding being shot through the chest and through the lung, he had no cough, and but little expectoration of any consequence, for the first four-and-twenty hours. The bloody expectoration did not come on to any extent till a later period. There was dulness on percussion on the right side of the chest soon after the accident,—too soon for it to have been due to inflammatory effusion; and it must, therefore, have been the result of the extravasation of blood. That dulness gradually increased; and he eventually died, partly from exhaustion, partly from inflammation of the pleura and of the lung, partly from the dyspnoea caused by the accumulation of a large quantity of fluid in the right side of the chest. In the post-mortem examination, we found that the bullet traversed the base of the right lung; and Mr. Bruce has ascertained, on more minute examination, that there is a largish bloodvessel opened along the track of the bullet, from which, no doubt, the hemorrhage proceeded. There was a good deal of blood infiltrated into the substance of the lung; and inflammatory action had taken place around the track of the

bullet. We also found that the right side of the chest contained three pints of bloody fluid. It was not pure blood, for there was no distinct coagulum; but it was evidently blood mixed with inflammatory effusion and a good deal of plastic matter. Those are the leading circumstances connected with this very interesting case; and now let us investigate its main features a little more closely.

The aperture of entry was a little depressed. The lips of the aperture of exit may have been a little everted. The aperture of exit is said to have been a little larger than the aperture of entry, but very little. So it would really have been a somewhat difficult matter, on looking at these two apertures, to have established so decided a difference between the two as to have justified a surgeon in swearing before a court of law as to what direction the bullet had taken, by which aperture it had entered, and by which it had escaped. This similarity between the two apertures in this case is to be attributed, first, to the conical shape of the ball, disposing it to separate rather than lacerate widely the parts. In the second place, there was no halo of splinters of bone or fragments of clothing around the bullet to enlarge the aperture of exit. In the third place, it may be laid down as a rule in surgery, that the greater the resistance met with by a bullet in traversing the body, the greater the difference between the aperture of entry and exit, because the ball, losing its momentum, tears more widely. No tissue in the body offers less resistance to a bullet than the structures which fill up an intercostal space and the soft lung-substance.

The absence of emphysema in this case is exceedingly interesting. Here was a man with two holes in the wall of his chest, back and front, and with his lung perforated, and yet there was no escape of air into the cellular tissue of the body. The reason for this is pretty evident. The wounds are somewhat oblique and pretty small; the bullet was conical, and fired at a very short distance, and consequently the tissues were probably separated rather than extensively opened, so that they had a tendency to collapse after the passage of the bullet, and thus the aperture was closed.

But why did not emphysema result from the wound in the lung? The same conditions which prevented the entrance of air through the chest-wall doubtless operated, to a certain extent, in restraining the escape of air from the lung. And, moreover, if you remember the condition in which we found the lung, this circumstance will be to a considerable extent explained. At the post-mortem examination, the lung was found infiltrated with blood to some distance around the track of the bullet. This infiltration of blood no doubt took place very rapidly, and blocked up the air-cells and smaller bronchi, rendering that portion of the lung almost impervious to air. Hence only enough air escaped to constitute pneumothorax.

A third cause was the rapid effusion of blood into the pleural cavity, which, as the wound was at the base, rapidly rose to its level, and so prevented the escape of air from the lung.

A very remarkable phenomenon in the case was the character of the expectoration; for many hours he spat no blood. One of the most common signs of a wound in the lung is said to be a tickling cough, with the expectoration of florid, frothy blood; but I think that the condition of things found at the post-mortem examination will enable us to explain this also. What was found at the post-mortem examination? Why, that the bullet traversed the lower lobe of the right lung, that there was an extensive extravasation of blood into the substance of the lung traversed by the bullet, and a great accumulation of blood in the pleural cavity around the lung, compressing it very rapidly. What happened in this case? As soon as the man was shot, the bleeding took place in the chest, and an extravasation of blood took place into the lung-substance itself, which swelled up rapidly, as any loose-textured structure, with a considerable ecchymosis, would. In such a case

the extravasated blood coagulates rapidly in the meshes of so cellular and spongy an organ, which renders that portion of the lung inoperative for breathing purposes. In consequence of the rapid accumulation of blood in the pleural cavity, the portion of lung that is wounded becomes speedily pressed backwards against the spine, becomes annihilated, as it were, for all purposes of respiration, so that no air enters it, and consequently any blood that is in it does not become oxygenated, and would not become florid. In that way we are able to explain how the sputum was not of a florid character. There was no blood effused into the bronchi that would come up rapidly, but the blood had effused itself into the general spongy substance of the lung, had compressed the air-cells and tissue there, and thus did not become subjected readily to the contact, and chemical changes that would otherwise have been impressed upon it by contact, with the atmospheric air. That, and the rapid compression of the lung, perhaps explain the absence of expectoration altogether at first. It also explains why the expectoration, when it did come, was not florid. It was not freshly poured out blood that was then expectorated; it was glairy mucus, the color of prune-juice, and called the "prune-juice expectoration." What was then taking place in the lung? There was, first of all, pneumonia going on, and we know that when pneumonia has once set in, the substance of the lung becomes consolidated, and the sputa are always rusty and brown. It is undoubtedly viscid sputum, tinged with decomposed blood—somewhat the kind of blood that you see in a bruise, first black, then becoming brown, purple, and green, in consequence of certain changes that go on in it after it has become extravasated. The sputum of pneumonia is tinged in that way. Such sputum we had here after the inflammation had set in; but, in addition to the ordinary rusty color of pneumonia, it was tinged with a considerable quantity of decomposed blood, which had been extravasated around the track of the bullet, and which was being expectorated in a semi-decomposed state, with color changed by decomposition and lengthened extravasation. Thus the condition of lung will explain the character of the sputum, which was so marked and exceptional in this case.

With regard to the treatment in this case, there are two points to which I wish to direct your particular attention; but before going to them, I will say one or two words about some minor points in the management of these cases.

First of all, as to the position of the patient. In such a condition of things as we had here, the patient should always be laid upon the injured side. For this there are two reasons: first, that the apertures may be dependent, so that any fluid that may accumulate in the chest may escape more readily. Secondly, that the lung on the injured side is already compressed, or being compressed, by the extravasated fluid; and hence, if you lay the patient upon the sound side, the sound lung is compressed by the weight of his body, and his respiration becomes most seriously embarrassed. Lay him on the injured side, and he has then the sound lung to respire with, uninterruptedly and freely.

With regard to dressing the wound in such a case as this: the dressing applied should be of the simplest character possible, merely water-dressing and a piece of lint.

One of the most important questions with these cases of injury of the chest is undoubtedly that of the propriety of bleeding the patient, of employing venesection. Now this is a point of practice of great importance. It is a point of practice that has been insisted upon very strongly by almost all military surgeons, who have necessarily had by far the greatest amount of experience of chest-wounds. Military surgeons in this country, and I believe I may say in France, but in this country certainly, are generally agreed upon the propriety of bleeding in penetrating wounds of the chest. But surgeons cannot, and do not, advocate indiscriminate bleeding in all these cases. I think that we may say this, that where there is a copious spitting up of florid frothy blood, shortly after a wound in the chest,

it has been found by experience, that taking away blood from the arm lessens this expectoration of blood from the lung.

But there was another important point of treatment involved in this case. It was this : here was a man who had a large accumulation of fluid on the right side of the chest. It was evidently increasing, or at all events had reached his fourth rib. His respiration was becoming impeded by this accumulation of fluid. Would it have been proper in this case to open the chest on the right side and to let out those three pints of fluid that we found after death ? Well, before I answer that question, let us hear first of all what military surgeons say upon this point. You will find that Dupuytren, Valentin, Sanson, the late Mr. Guthrie—and I believe I may say that the surgeons who practised in the Crimean war agreed with their opinion (what opinion they have held since I do not know very positively)—these surgeons, I say, are clear upon this point : that you may open the chest of a man who has been wounded in the lung, and who is suffering from accumulation of fluid in the pleural cavity ; you may open the chest, but you must not do it until you are perfectly certain that all the hemorrhage has ceased, and that all the possibility of recurrence of hemorrhage has passed by. In other words, it is quite right to open one of the bullet-wounds and put in a catheter or a canula, or to tap the chest, if necessary, when it is inflammatory effusion, or inflammatory effusion mixed with blood, perhaps ; or it may be right to do so after so many days have elapsed from the time of the receipt of the injury, that no more bleeding can occur ; but it is not right to do so previously to this. It is of course very difficult, nay, impossible, to say when the bleeding has ceased, or is likely to recur ; and hence military surgeons generally say that you ought not to tap the chest, or to reopen the wound, to let out fluid that has accumulated, until the eighth or tenth day after the receipt of the injury. Allow eight or ten days to elapse, and then the chances are that it will be more inflammatory effusion than blood ; or, at all events, by that time the chance of the recurrence of hemorrhage has passed by. Undoubtedly, if this poor fellow had lived till that time, and had been in a condition not too prostrate to admit of anything being done, we should have opened up the posterior wound and let out the fluid that had accumulated within his chest. But he did not live long enough, and was too prostrate for that.

Why is it not proper to open the chest before the eighth or tenth day ? You will see a very good reason for that, as there is for most of these rules in surgery. It is not proper to open the chest before that date for the following reason : When bleeding takes place into the pleural cavity, what happens ? Why, as the blood accumulates in the pleura, it pushes the lung more and more back against the spine ; it continues to press the lung, until at last, when the pleural cavity is pretty well filled, the lung is so compressed as to lie back in a collapsed condition and be impervious to air. Thus the accumulation of fluid, by its pressure against the lung, by the collapse which it induces, and by preventing the alternate expansion and contraction of the lung during respiration, tends to restrain the hemorrhage ; and the blood that has already escaped, by its very accumulation, prevents the escape of further blood. You will observe that, in this case, the line of dulness increased up to about the third day, and then reached up to the third rib ; so that, by that time, in all probability, this man had lost as much blood as he was likely to lose so long as the chest was left in a quiet state. The lung had become pressed back against the spine and consolidated, and the bleeding had ceased. But if we had tapped the chest, and drawn off the fluid as it escaped from the chest, the lung would have expanded, the lung-tissue would have opened up, the coagula in the pulmonary vessels would have been disturbed, and the hemorrhage would have immediately recommenced ; for, just in proportion as the fluid was drawn off and removed from the outside of the lung, and the compression

exercised by it removed, the blood would have begun to pour into and out of the pulmonary vessels within the lung. If he had lived for eight or ten days, a quantity of lymph would have been deposited on the lung, the wound in the lung would have become covered over by a thick layer of plastic matter, and that portion of the lung, more or less, permanently bound down against the spine as in a case of empyema. After the lung is thus bound down, you may remove the fluid without the danger of the recurrence of hemorrhage. The lung-tissue continues to be compressed, the bloodvessels to be walled up by coagula and plastic matter; no movement of expansion in the lung follows the escape of the fluid, no disturbance of the closed vessels, and no liability, therefore, to the displacement of clot and the recurrence of hemorrhage. For the reasons just given, we did not think it proper to draw off the fluid from the poor fellow's chest at an early period; and, during the last thirty-six hours of his life, he was not in a condition to bear any operation; even turning him in bed gave him intense pain; and, indeed, he was evidently sinking.

Effects of Projectiles.

Bullets, which penetrate in a half-wet earth, like clay, make a hole larger where they enter than where they burst out. To determine this, construct a massive frame of timber, five or six yards thick, and fill it with clay. In firing at this a shot of 24, the hole presents the appearance of a funnel, having a diameter of 1 yard and 80 centimetres at the entrance, and of 15 centimetres at the exit. This effect is due to the transmission or non-transmission of motion by the air. This can be proved by examining a section of either of these orifices; it is always a circle composed of small consecutive arcs, showing interruptions, darkened by the sulphurous gases, carried along with the bullet. In making up the total of these elements, we find exactly the length of the circumference of the projectile. The effects of communication of movement are, moreover, more energetic when the clay is somewhat compressed. All the resistance of the centre to the penetration is represented by two conditions,—the one is independent of the swiftness, the other is proportional to the square of this swiftness; whence we deduct the equation of the curve, which is a logarithm, as true a one as geometry decides. When we raise the profile impressions the next day we are able to note a diminution in the length of all the diameters obtained, which proves that clay has a certain elasticity, which only shows itself at the end of a time more or less long. (*La France Médicale*, October 16th, 1867.)

Treatment of Wounds without Dressings.

Dr. G. M. HUMPHREY, F.R.S., Professor of Anatomy in the University of Cambridge, says (*British Medical Journal*, August 3d, 1867, p. 79) that the question, "Do you ever see the wounds after amputation, removal of tumors, and other large operations, heal up by first intention?" is more often asked than satisfactorily answered. He proceeds to give suggestions for the better management of wounds. The *sine qua non* for immediate union of wounds is *adaptation of the cut surfaces*. In small and superficial wounds there is no difficulty in effecting this. In the case of larger wounds the suture is the best means, of which the twisted suture is the best form. If the common suture be used, thread is better than wire, holding its ground longer, and causing less irritation and ulceration of the skin. The portion of skin included in the knot should not be strangulated, or even injuriously compressed.

When a wound has been carefully closed by sutures, no other application is needed.

Plasters, lint, unguents, water-dressing, &c., are not needed, and should, therefore, not be used. They will not maintain any closer apposition even of the deeper parts of the wounds than the sutures have already done. If there be blood or other foreign substances between the cut surfaces, this will not be prevented or even diminished by external appliances. It is very difficult to adjust pressure accurately enough on a large wound to prevent the oozing of blood; and, unless it is well applied, it is a sure cause of pain and inflammation. Slight uniform pressure might be serviceable; the well-doing of superficial wounds, which are simply bound up and sealed by their blood, indicates that it would; but, in larger wounds, I have found that pressure applied in various ways, and as carefully as I could, did, on the whole, more harm than good. I have, therefore, for many years, been in the habit of leaving the wounds after operations, with their edges approximated by sutures, quite uncovered and dry. The part is thus cool, and free from any external source of irritation. To the advantage of enabling us to see the state of the wound and of the skin around, this plan adds the very great comfort to the patient that there are no applications to be removed, no dressing to be done. That grave addition to the distress following an operation is spared. Warm-water dressing or a poultice, after a few days, may be desirable. We rarely resort to any other means in this hospital, and have had good reason to be satisfied with our non-interference. I am glad to learn that the same plan is being tried in some other hospitals, and with good result.

"But," I am sometimes asked, "is it not better to exclude the air; is not the air a source of irritation; is not the well-doing of subcutaneous wounds due, in great measure, to the exclusion of air?" To this I reply, that it is certainly well to exclude air from the interior of the wound, where it keeps the surfaces apart and promotes decomposition of the fluids, and, perhaps, of the solids. On the surface of the wound, however—that is, on the skin—it does not act as an irritant; and we should scarcely expect that it would. We have long been in the habit of leaving wounds of the face uncovered, and they usually heal remarkably well. Why should we not follow the same practice in other parts of the body?

One of the great difficulties in the treatment of wounds is hemorrhage. The cut surface should be rubbed over rather firmly with the sponge, to cause the vessels, which may have temporarily contracted, to open up and be secured. For this purpose the *ligature* is perfectly efficient. Made of good material and tied tight, it never or rarely fails. Acupressure may be better than ligature. A large experience is required to form an estimate of the relative advantages of the new and the old methods; but it would be better still if some effectual means of arresting hemorrhage could be devised without leaving any foreign body in the wound.

IV. FRACTURES AND DISLOCATIONS.

Dislocation of the Head of the Femur on the Dorsum Ilii in a Child Thirty Months Old. Reduction on the Tenth Day.

By N. FANNING, M.D., of Catskill, N. Y. (New York Med. Journ., Sept., 1867, p. 490).

The points of interest in connection with this case are the age of the patient, the duration of the dislocation before reduction was attempted, the failure of manipulation, thoroughly and persistently practised to effect reduction, and the comparative ease with which

it was accomplished by extension and counter-extension, and the slipping of the head of the bone into the thyroid foramen, by the extension being made not in the line of the adducted limb. The latter deformity was readily reduced.

Fracture of the Humerus of a Child in Birth.

By N. FANNING, M.D., of Catskill, N. Y. (New York Med. Journ., Sept., 1867, p. 493).

During a short and natural labor, the occiput corresponding with the left acetabulum, just as the right shoulder of the child was passing under the pubic arch, a distinct snap was audible, which was found to have been caused by a fracture of the lower part of the upper third of the right humerus. The fracture united readily and quickly under appropriate treatment, leaving no deformity.

In commenting upon the causes to which the accident was attributable, Dr. Fanning leans to the opinion that it was due to some malposition of the extremity at the time of the fracture, favoring such accident. Just after the escape of the head, some part of the hand or forearm was felt under the arch of the pubes, which certainly did not present before. The exact state of things could not be determined, since another pain followed in quick succession, and delivery was completed. The child was well formed, healthy, and presented no evidence of fragility of the bones. Dr. Fanning suggests, therefore, the possible deviation of the arm in some such manner that, whilst the inferior extremity of the humerus was for a time fixed, the expulsive force of the uterus, by causing the superior extremity and shoulder to descend, necessarily removed the impediment to the descent by causing the fracture.

The Treatment of Fractures by Elastic Extension.

In an article on the "Elastic Extension Treatment of Fractures," by H. WORTHINGTON, M.R.C.S., late House-Surgeon to the Middlesex Hospital (*British Medical Journal*, July 20th, 1867, p. 42), the following description of the way in which elastic extension is applied at the Middlesex Hospital is given :

The splint employed is of suitable size, and a modification of that recommended by Mr. Barwell for extending the leg in hip-joint disease. It consists of a long, straight stout splint, with a piece of wood about a foot in length let in at right angles to it, about six inches from its lower end. The long arm of the splint is well padded on its inner side. An inch or two from the upper end of the splint is a small pulley, fixed in an aperture made for the purpose; a similar one is placed at the lower end. That part of the splint which is let in at right angles, is provided with a slit extending nearly its whole length, admitting another pulley of similar size, which can be shifted to various parts by means of an iron pin passing through holes bored in the sides of the cross-piece. A strong piece of strapping is now applied to the sides of the leg, leaving a loop at the sole of the foot as in the ordinary way, care being taken that the loop shall be large enough to admit a tightly rolled leg-bandage; this being placed transversely at about the middle of the sole of the foot, so that it is enabled to receive all lateral pressure when extension is applied. Without this, the strapping would cut the hollow and outer side of the foot, and give rise to considerable pain and inconvenience. In cases of fracture of the leg, the strapping should not come above the seat of injury. The foot should now be bandaged, so as to retain the strapping firmly. A piece of strong cord is then fastened to the loop of plaster, so as to include it and the roller, and this gives us a fixed point to pull upon

from below. The cord, thus fastened, is next passed over the pulley which lies in the slit in the cross-piece, then over the pulley at the lower end of the splint, and is carried to about the middle of the outside of the long side-piece. Here it is attached to one end of a patent elastic door-spring, or accumulator. To the upper end of the elastic is attached a piece of wood, about four inches long, one inch broad, and half an inch thick, perforated by three holes equidistant, and just large enough to admit the cord used. By one of these holes, it is secured to the elastic. A well-padded perineal band is now applied, to the upper part of which a separate piece of cord is fastened. This is brought over the pulley at the upper end of the splint, and then made to perforate successively the two remaining holes in the piece of wood attached to the elastic. It will now be evident that, by slipping this piece of wood up the cord fastened to the perineal band, the elastic will be put on the stretch, and, in this way, extension may be regulated to a nicety.

The limb may now be brought into position, and extension applied as far as is deemed advisable. It does not appear necessary to reduce the fractured limb to its normal length on the immediate application of the splint; for, if this be not directly obtained, the constant extension which is kept up gradually overcomes the contraction of the muscles, and, with very little adjustment, the limb will be found to have gained its proper length in the course of two or three days, the extension being increased or diminished according to the necessities of the case.

There are many advantages besides this. Apart from doing away with the forcible extension necessary to overcome spasmodic contraction of the muscles, which often gives rise to so much pain and subsequent excessive irritability of the parts, there are many reasons for urging the trial of the above-mentioned plan, more especially in fractures of the thigh.

With the exception, perhaps, of an occasional twist once or twice round the knee or ankle to steady the limb, no bandaging is required; or a sand-bag on the inner side of the extremity will generally effect all that is wanted. With the dispensing of bandages, not only is the patient relieved of much pain at the time of putting up the fractured limb, but also of all distress occasioned by their subsequent renewal and adjustment. The surgeon's time is saved, which is no small gain if he have several such cases to attend to daily. The large surface of skin remains exposed. Thus its excreting power is unimpaired; and the irritation which is occasioned by its excretions being pent up, and which at times becomes almost unbearable, is altogether avoided. The limb can be cleansed daily without interfering with the appliances, and every practical surgeon knows the value of this measure. Moreover, with a momentary glance, it can be ascertained whether the position of the limb is good, and any irregularity remedied.

Another very great advantage is, the being able to place the splint and perineal band on the sound side, as has been for some time practised by Mr. De Morgan in cases of hip disease. This, of course, will be especially useful when there is abrasion or bruising of the injured side, which would be aggravated by anything coming in contact with it. When the splint is used in this way, a sand-bag on each side of the limb will be sufficient to steady and support it.

Case of Complete Lateral Luxation of the Radius and Ulna Outward.

Dr. THEODORE R. VARIOK, of Jersey City, N. J., says (*Medical Record*, November 1, 1867, p. 387):

Geo. Knight, æt. 9 years, was thrown violently from a wagon while in rapid motion,

striking on his head and back, with his left arm behind him in a state of flexion. He was brought to my office on the 31st of August, 1867, within ten minutes after the receipt of the injury, and, consequently, in the most favorable condition for manipulation, no swelling in the soft parts having yet occurred. The forearm was in a state of semi-flexion, supported by the hand of the opposite side, the ulna lying to the outer side of the external condyle, with slight posterior projection of the olecranon. The olecranon, coronoid process, and greater sigmoid cavity, could be distinctly defined, and the head of the radius in its normal attachment, could be felt rotating subcutaneously on pronating and supinating the forearm. Free motion of the forearm in every direction was present, giving the impression of being attached to the arm solely by the soft parts. The projection of the internal condyle was out of all proportion to what is seen in cases of incomplete luxation. The trochlea, coronoid depression, and the olecranon depression, were distinctly recognized. Complete dislocation of the ulna outward was diagnosed, which diagnosis was corroborated by my friend, Dr. B. A. Watson, who was present and assisted in the reduction.

The patient was placed fully under the influence of ether, and moderate extension, combined with lateral pressure, effected the reduction without difficulty. The subsequent treatment consisted of rest and cold irrigation for a few days, followed by passive motion of the parts, which resulted in perfect recovery. The amount of inflammation which followed the injury was exceedingly slight, due unquestionably to the prompt reduction of the luxation.

The exceeding rarity of accidents of this kind renders the case one of more than ordinary interest. So rare are they, that Sir Astley Cooper doubted the possibility of their occurring, and writes as follows: "With respect to lateral luxations, they are always incomplete, and easily discovered." Gross's skepticism is expressed in the following words: "Lateral dislocation of the elbow-joint, besides being exceedingly rare, can scarcely occur in any other than an incomplete form, and as a consequence of severe injury extensively implicating the soft parts."—*System of Surgery*, vol. ii, p. 70.

Erichsen's testimony is, "Complete lateral dislocation of the bones of the forearm being exceedingly rare."—*Science and Art of Surgery*, p. 254.

According to Chelius, "The lateral dislocation may be either complete or incomplete; that outward is more frequent than that inward."

"In complete lateral dislocation the projection of the fore and upper arm are much more decided than in the incomplete, and on account of the great tearing of the soft parts, the forearm is movable in every direction."—*System of Surgery*, vol. ii, p. 229.

Hamilton writes as follows: "The large majority of outward dislocations of the forearm are incomplete; indeed, only nine examples of a complete dislocation have been collected by Denucé, including two seen by himself. Malgaigne has since added two more, making in all eleven cases. All these examples have occurred in the practice of French surgeons. So far as I am able to discover, no American or English surgeon has ever reported a single example."—*Fract. and Dislocations*, 3d edition, p. 601.

Nélaton has also reported one, making in all thirteen recorded cases of the accident; which may be summed up as follows: Denucé, nine cases; Malgaigne, two; Nélaton, one; Varick, one; total, thirteen.

Epiphysary Disjunctions.

ROBERT W. SMITH, F.R.C.S.I., Professor of Surgery in the University of Dublin, in the address on surgery before the British Medical Association, August, 1867 (*British Medical Journal*, August 17th, p. 121), says:

The practical subject, to which I am anxious to direct the attention of the meeting, comprises the class of injuries known by the title of "Epiphysary Disjunctions." I have selected it for many reasons, amongst which I may mention, the numerous instances in which I have seen errors of diagnosis committed regarding them; the serious results of such mistakes; their being either but slightly noticed or altogether omitted in our systematic works on surgery; the absence of any special treatise on the subject; and the ignorance respecting them displayed by the continental writers. Even Nélaton, who may be truly said to wield at present the sceptre of surgery in France, has said, that the materials for a complete exposition of these injuries are wanting; that we have nothing to deal with but assertions unsupported by proofs and cases destitute of value because destitute of details; and he sums up his brief remarks by the erroneous assertion, that the signs which attend them are the same as those which indicate the existence of fractures in their immediate vicinity. Moreover, in the *Gazette des Hôpitaux* for the year 1865, there is recorded a discussion at the Surgical Society of Paris, in which some of the most distinguished members stated that these injuries could not be diagnosed with certainty, while others (including Chassaignac) doubted that they ever occurred. In my opinion, they constitute a class of injuries, the diagnosis of which can be formed (by the surgeon familiar with the anatomy of the epiphysis) with more facility and a greater amount of certainty than that of any other variety of fracture. Moreover, they possess this special peculiarity (at least, as regards the shoulder, elbow, wrist, and ankles), that, although they are accompanied by many signs and symptoms, the aggregate of which establish the nature of the injury which the bone has sustained, there is a single sign which, by itself, is pathognomonic of the disjunction of the epiphysis.

Professor Smith then proceeds to point out that those who have written upon the subject of injuries of the elbow-joint have confounded with each other fractures *above* the condyles and disjunction of the epiphysis, from ignorance of the anatomical fact, *that the lower epiphysis of the humerus does not include the condyles, which belong entirely to the shaft of the bone.* The epiphysis includes nothing but the trochlea and the capitulum. The fundamental mistake of placing fracture through the line of the epiphysis among *supra-condyloid* fractures as has been done by Malgaigne, Vidal (de Cassis), Dupuytren, and others, has involved the equally glaring error of distinguishing these two injuries from luxation of both bones backward by the same diagnostic sign; viz., the loss of the normal relation of the olecranon process to the condyles of the humerus.

In the *Gazette Médicale* for 1834, Rognetta has published a series of elaborate memoirs upon the traumatic division of the epiphysis; but, when speaking of that of the lower extremity of the humerus, he says, that the condyles are detached and drawn backward along with the bones of the forearm.

The symptoms which belong to this injury in common with fracture above the condyles, are the following: Shortening, crepitus, the removal of the deformity by extension, and its tendency to recur when the extending force is relaxed; the presence of an osseous tumor in front of the joint; the increase in the antero-posterior diameter of the elbow. It differs from the supracondyloid fracture in the greater transverse breadth and regular convex outline of the anterior tumor; in the existence of two tumors posteriorly; in the loss of the normal relation of the olecranon to the condyles. It resembles dislocation of both bones of the forearm backward in the following particulars: The transverse diameter of the anterior tumor is the same in each case; so also is the antero-posterior breadth of the elbow; in both the olecranon ascends above the condyles, the limb is shortened, and two osseous prominences can be distinguished posteriorly. It differs, however, from luxation in the existence of crepitus, in the tendency of the deformity to recur, and in

the circumstances of the anterior tumor being destitute of trochlea and capitulum, and the two posterior tumors being nearly on the same level.

The disjunction of the lower epiphysis of the tibia is undoubtedly among the rarest in this class of injuries. I am not aware of any well-authenticated example of it having been placed upon record, with the exception of one that I published myself in 1860.

Fracture of the humerus through the line of its superior epiphysis is an accident of frequent occurrence; but it is not difficult to recognize, for the deformity which accompanies it is of a very striking character; and its most remarkable feature is an abrupt projection situated just beneath the coracoid process, and caused by the upper end of the lower fragment or shaft of the bone, drawn inward by the muscles constituting the folds of the axilla. There is but little displacement as regards the length of the bone; for the extremity of the inferior fragment is seldom drawn so far inward as to enable it to clear completely the surface of the superior.

This remarkable and abrupt projection does not present the sharp irregular outline of an ordinary fracture. On the contrary, it feels rounded, and its superior surface is smooth and slightly convex. The axis of the arm is directed downward, outward, and backward. By pressing the projection of the lower fragment outward, and directing the elbow inward, the deformity can be easily removed, but of course recurs when the parts are abandoned to the action of the muscles. In short, the separation of the superior epiphysis of the humerus is so marked an injury, that no moderately well-informed surgeon will be likely to confound it with any other incidental to the shoulder. Its pathognomonic sign is the infra-coracoid projection, so well seen in the numerous casts upon the table.

The separation of the lower epiphysis of the radius is also an injury of frequent occurrence, and is interesting from its liability to be mistaken for Colles's fracture, or for fracture of both bones close to the wrist. Our systematic works are remarkable for the paucity of the information they contain respecting it. Malgaigne speaks of it as the most common of all the epiphysary disjunctions; yet he has given no description of its external signs, or of its anatomical characters. He has merely alluded to the cases mentioned by Cloquet, Roux, and Johnston. The injury resembles Colles's fracture in the loss of the power of rotation, in the existence of a palmar and a dorsal tumor, and in the increase of the antero-posterior diameter of the limb at the seat of injury (not always, however, well marked); but differs from it in the absence of that singularly distorted and twisted appearance so characteristic of Colles's fracture, and which is owing to the lower fragment of the radius being drawn to the side of supination, as well as displaced backward. The epiphysis passes directly backward, without any tendency to supination. There is no elevation of the styloid process; so that the radial border of the forearm does not present the curved outline so frequently seen in Colles's fracture. In the last-named injury, the dorsal tumor is usually more evident than the palmar, and the sulcus which limits it above passes obliquely downward and inward; but, when the lesion of the bone traverses the line of junction of the epiphysis with the shaft, the palmar tumor is by far the more striking of the two; and both tumors take a transverse direction, so that there is none of the appearance of obliquity which so many cases of Colles's fracture present. It is more readily confounded with fracture of both bones close to the wrist; there being in each case, occupying the same position, and presenting to a certain extent the same form, an anterior and a posterior tumor. There is a similar increase in the antero-posterior diameter of the forearm, and a similar impairment of the functions of the limb. In the case of fracture of both bones, however, or (to speak more accurately) separation of the radial epiphysis and fracture of the lower end of the ulna, the deformity is much greater, and resembles that observed in cases of luxation of the carpus backward—an injury to which

separation of the radial epiphysis bears but little resemblance. Moreover, in the latter injury (epiphyseal disjunction), the anterior tumor does not extend completely across the entire breadth of the forearm, being limited to the transverse extent of the radius; but the opposite is the case when the lesion implicates both bones.

Fracture of the Sixth and Seventh Cervical Vertebrae.

A case of this fracture occurred at St. Bartholomew's Hospital, under the charge of Mr. Holmes Coote (*British Medical Journal*, July 6th, 1867, p. 7), in which death ensued in three days, and the post-mortem showed that trephining would not have saved the patient.

Subperiosteal Resections.

Subperiosteal resections of entire bones, or of portions of their shafts, have for their object the removal, by cutting instruments, of the whole thickness of the bone from beneath its periosteal envelope, the latter being left in situ, and its connections with the soft parts undisturbed, to supply a substitute for the bone that has been excised. In this country, few attempts have been made to take advantage of the osteogenic properties of the periosteum, but the names of Bigelow, Wood, Weist, Kempster, Conant, and Moon, are honorably connected with it. In Great Britain, the subject has received little attention. Whereas Langenbeck, Neudörfer, and Lücke, of Germany, Ollier and Sédillot, of France, Larghi, of Italy, and Creus, of Spain, have had much experience in the procedure, and given a great impetus to its adoption in other quarters of the globe.

The literature of the subject within the past six months is very meagre; but the following papers refer to subperiosteal resections of entire bones, or of portions of their shafts, for pseudarthrosis, and caries, and neurosis, as well as to subperiosteal resection of joints, and periosteal transplantation in rhinoplasty. In the section on amputations we have made a brief abstract of a case of amputation at the hip-joint by Petechin, which might properly be termed subperiosteal.

Ununited Fracture successfully treated, with Remarks on the Operation.

By HENRY J. BIGELOW, M.D., Professor of Surgery in the Medical College of Harvard University (pamphlet reprint, p. 25. Boston, 1867.)

It is well known that Mr. White, of England, in 1760, first excised the ends of the fragments in cases of ununited fractures, and that Horeau, in 1805, proposed to maintain them in contact by means of a wire, an operation which was first performed in this country by Dr. J. Kearney Rodgers, of New York. More recently, Mr. Jordan, of Manchester, took advantage of the reproductive powers of the periosteum in cases of a similar nature, and his procedure was modified by M. Bérand. The operation of Dr. Bigelow is a combination of, and improvement on, all of these, and differs from that of Mr. Jordan, in that the periosteum is not detached from the surrounding muscles, and the freshened ends of the fragments are maintained in accurate and steady apposition by means of a wire.

Dr. Bigelow gives the details of eleven cases treated by his method, of which nine pertained to the humerus, and one each to the radius and femur. All were successful, with one exception, the humerus being affected, and the failure was due to softening of the bone. At the patient's desire, the arm was subsequently amputated. In eight of these cases, previous operations, as the seton, excision of the ends of the fragments, with and without

wiring, and drilling, had been tried, and all failed to effect a cure. The operation consists in carrying an incision over the site of the fracture. The principal bony extremities being formed, the interval is gradually divided, and the ends turned out, the dissection being aided by powerful flexion of the false joint. As it yields, care is taken to prevent the muscles from being stripped from the periosteum. When one extremity is fairly exposed, an incision is to be made in the ragged callus which overlies the periosteum at its top, which should then be seized by strong-toothed forceps, and efforts made to tear it out of the rugous inequalities of the bone. After a little delay on dissection, the flaps begin to yield; the terminal connections are detached, and the sound bony shaft is reached, when the periosteum is only too easily stripped from the bone, requiring great care lest the shaft should be denuded higher than the intended section. The soft tissues being now protected by spatulæ, the end of the shaft is removed by a common saw, the length of this fragment being determined by the amount of periosteum it has been necessary to detach. Half an inch of good cylindrical periosteum, with the same extent of ragged tissue hanging at its extremity, has usually covered from three-quarters to an inch and a half of bone. Half an inch of sound shaft, with an irregular or conical extremity varying in extent, is about the proper amount to be excised. The other extremity is now to be treated in the same way, when holes are bored a little more than half an inch from the ends, and through one wall only, and a pure, flexible silver or plated copper wire, of No. 10 of Stubb's iron wire gauge, inserted. The extremities of the wire are brought together accurately, and twisted long enough to protrude at the external wound. The incision is then brought together by sutures, having a free exit for discharges, and the apparatus applied. For a description of the latter, we must refer to the original paper.

Although it does not appear that there was any regeneration of bone in the cases narrated by Dr. Bigelow, yet his results are so very gratifying that the procedure is certainly worthy of imitation. Great stress is laid on the five following points in the operation: 1. The arrangement of the incisions with a view to the free escape of pus. 2. The preservation of the periosteum, by saving its connections with the surrounding muscles. 3. Incision of the periosteum, and tearing it out from the rugous inequalities of the previously inflamed bony extremity, and subsequently attaching it by suture or not. 4. The excision of at least one-fourth of an inch of the sound shaft of the bone, along with its irregular and tapering end. 5. Retention of the wire until union has unequivocally taken place; a period of from two to six months.

On Necrosis and Reproduction of Bone.

By Professor JAMES R. WOOD, M.D., of Bellevue Hospital Medical College, New York.
(*New York Medical Record*, August 15th, 1867, p. 269.)

In an extremely interesting lecture on "Necrosis and Reproduction of Bone," delivered at Bellevue Hospital, Professor Wood illustrated his subjects by numerous specimens of reproduced bones, which had been accumulating in his practice for twenty years, and gave a general summary of the surgical and physiological theories as to the osteogenic properties of the periosteum. It is to be regretted that many of the cases are not reported in detail, so that our readers will have to be contented with a general account of Dr. Wood's successes in this line of surgery. They are all good examples of subperiosteal resections for necrosis or caries. Upwards of fifteen years ago, a portion of a necrosed rib was removed from a woman, who died eighteen months subsequently of phthisis. The continuity of the bone had been re-established, the regeneration being perfect.

In another case, the greater portion of the clavicle had been excised, leaving as much

as possible of the periosteum. The result was excellent, although nature had been rather bountiful, the new bony tissue being exuberant. There was some shortening, but the continuity was firm.

A patella was next exhibited, which was taken from a child, ten years of age. The bone was much diseased, and Dr. Wood cut down to attempt to free the abscess in which it was bathed, and being digested. The joint was inflamed, but the ulceration did not extend into it, nor was the periosteum involved. After several months, the reproduced bone was twice the size of the opposite one, and all the motions of the joint were complete.

A remarkable specimen, being nearly the whole of the tibia, was next the subject of comment. The involucrum and sequestrum were both removed, the periosteum being left entire. The result was as good and as strong a leg as the one which was not diseased.

The superior maxillary bone of the right side, except the orbital process, was then exhibited. The patient from whom the specimen was taken, was a lady who had inflammation of the periosteum and loss of her teeth, with disease of the upper maxilla. An incision was made along on the side of the gum down to the periosteum on the inside and outside, and as the periosteum was gradually separated, the bone became hard and dense. A new jaw formed without any deformity, and, as she wears artificial teeth, no one would imagine that she had ever been the subject of operation.

By far the most interesting specimens, however, were those which referred to the reproduction of the lower maxilla, and we deem them so valuable as illustrations of this branch of surgery, that we extract the author's remarks in full. Some years since, we had the pleasure of seeing the specimen described in the first case, and were struck with the wonderful extent of regeneration of the bone.

"I have here two jaws which were recovered from the effects of vapor of phosphorus. In this case, which was of a young lady, the periosteum was enucleated and the reproduction of a new jaw was the result, with very slight, if any deformity. This girl, when she got well of this operation, left the hospital with a new jaw, returned to her old friend and employer, and again engaged in the manufacture of lucifer matches. She had a decayed tooth in her upper jaw, which was removed, and the vapor then attacked the periosteum of the left upper jaw, and I removed the most of this, and reproduced the jaw. So I not only reproduced this portion of the upper jaw, but the whole of the lower jaw complete, and I believe this is a unique specimen.

"In this other specimen which I show you of the reproduction of the lower jaw, all its motions, functions, and processes are complete. You see the processes to which the muscles passing between the hyoid bone, the tongue, and jaw, are attached, and you observe that the coronoid processes are perfect, reaching up under the zygoma; and more than this, you perceive, what is denied by many, that the surgeon can reproduce a joint. Many operators will tell you that you cannot reproduce a joint where you have removed the bones forming it. But you see here the condyloid process shining beneath the synovial membrane, with the cartilage of incrustation and the ligaments attached to it, performing all their functions. The synovial membrane, the cartilage of incrustation, and the ligaments, are intact, and all the functions of the jaw are perfect. This poor girl died subsequently of abscess of the brain.

"You can even do more than this sometimes. I was asked by a gentleman, who had heard me describe this operation and its results some time after that reproduction of the lower jaw, 'if the teeth were through yet in the new jaw?' I told him they were not. But, gentlemen, I have left the old teeth in the new jaw; and this specimen was taken from a patient that I operated upon in this hospital with this result. I enucleated the bone, and found that the four incisor teeth were becoming firmly attached to something.

I separated carefully the bone beneath the periosteum which was becoming solidified, and I discovered that the teeth were being embraced by the new bone, that it was forming a cast round about the teeth, and at the time of the operation, after I had enucleated and made solid the periosteum, I lifted the old bone out, and left the patient's teeth in the new jaw! Eighteen months after this operation my house surgeon, Dr. Phelps, and myself saw her, and the teeth were very firm, and as useful as they were in their old place."

It may here be added that a somewhat similar operation of subperiosteal resection of the lower jaw, in which the teeth were attached only to the gums, and were afterwards incrustated by new alveolar processes, has been reported by M. Maisonneuve (*Clinique Chirurgicale*, tome i, p. 616).

Periosteal Reproduction of the Condyles of the Humerus after Excision of the Elbow-joint.

By Professor H. J. BIGELOW, M.D. (Pamphlet, *ut supra*, p. 22.)

A man, aged 29 years, had been affected for nearly six years with scrofulous caries of the right elbow, which was riddled with fistulous openings. On the 19th of June, 1858, Dr. Bigelow opened the joint by a semicircular incision, and found that the ends of all the bones were much diseased. The head of the radius, about an inch of the ulna, and an inch of the humerus were excised. The periosteum, being firmly attached to the coral-like surface of the bone, was torn out from the inequalities with strong forceps. An angular splint and water-dressings were applied.

On the 5th of September the patient was sent to the country, and one month subsequently an abscess opened two inches below the situation of the head of the radius. On the 11th of November the integuments around the elbow became red and inflamed, and perforated by five sinuous openings. Nine days later the arm was removed in its lower third, and the patient made a good recovery. On the 1st of December, 1859, the patient died of phthisis.

The interesting points in connection with this case are the reproduction of the condyles of the humerus by the periosteum, which was torn from the interstices of the surface of both the original condyles. The horns which were reproduced for the insertion of the extensors, supinators, and flexors, are conical processes, each somewhat more than half an inch in length, and regularly curved forward and inward. These appearances are illustrated by a wood-cut, to which we would refer for a proper appreciation of the extent of the reproduction of the bone.

Periosteum of the Frontal Bone transplanted in a Rhinoplastic Operation—No new Bone Formed—Necrosis of the Exposed Skull.

By Professor H. J. BIGELOW, M.D. (*Ibid.*, p. 24.)

The patient was a woman, 22 years of age. A flap was taken from the forehead in the usual way, and in dissecting it up, the periosteum to which it was attached was carefully removed from the frontal bone, in the hope that it would form a new bridge. Eleven weeks after the operation the entire exposed bony surface was lifted off, by means of forceps, in two fragments, being itself a very thin scale, covering a healthy granulating surface. The operation was successful so far as the new nose was concerned, but no new bone could be detected five months subsequently.

[Although not strictly a subperiosteal resection, transplantation of the periosteum is so

analogous a procedure, that it claims consideration under the same head. Originally practised by Langenbeck (*Deutsche Klinik*, No. 48, 1859), the distinguished Berlin surgeon was himself doubtful as to the success of his attempt at regeneration of the nasal bones, but Dr. Dor followed up the case, of which the following is a brief abstract:

A woman, aged 40 years, was subjected to a rhinoplastic operation on the 17th of November, 1859, the only difference between this and other rhinoplastic operations consisting in including in the flap a portion of the periosteum of an extent corresponding with the size of the lost bones. On the 6th of the following February the bridge of the nose was perfectly firm, and the introduction of a sound into the nasal cavity gave the sensation of true bone. The internal surface was resistant and smooth, and osseous deposit of bone appeared to have taken place. This was further confirmed by microscopical examination, osseous tissue, differing in nowise from true bone, being detected. A small portion of the frontal bone exfoliated. (*Echo Medical*, No. 7, 1860.)

In the *Dublin Quarterly Journal* for May, 1865, Mr. Stokes narrates an osteoplastic operation for a new nose, but it does not appear whether bone was deposited or not. On the whole, transplantation of the periosteum has not been favorably received by the profession, since, with the exception of the case of Langenbeck, there is no reliable evidence that it has ever been followed by reproduction of bone in the human subject. Sédillot and Desgranges deny that it effects the object, and they are by no means singular in that opinion. In two of the three instances here noticed portions of the exposed frontal bone exfoliated, thereby delaying the cure, and materially endangering the result.]

V. AMPUTATIONS AND RESECTIONS.

Successful Double Amputation of Lower Limbs.

Mr. MARSHALL, of the University College Hospital, London, reports (*British Medical Journal*, June 22d, 1867, p. 731) an instance of perfect recovery after the removal of both lower limbs. The man was aged 25; frightfully injured by a railway accident. The right thigh was taken off at its lower third by antero-posterior flaps, and the left leg at the upper third by a long posterior and short anterior flap. The thigh stump remained open in one spot on account of a piece of dead bone; but on this being removed, the flaps healed up entirely.

Resection of the Knee.

Observations on Resection of the Knee in Children, by Dr. KÖNIG, of Hanau (*Langenbeck's Archiv*, Band ix, Heft i, pp. 177-220, 1867).

Dr. KÖNIG has collected and tabulated 112 cases of resection of the knee in children up to the age of 16 years, including two of his own, the greater number of which are drawn from the tables of Heyfelder, Price, Lücke, Völckers, Verneuil, and Heineke. The majority of the operations were performed by the English surgeons, after whom rank the German and French. Not having had access to the brochure of Dr. Hodges, of Boston, nor to our periodical literature, the American cases, with the exception of one of Bauer, are not represented.

Of these 112 cases, 70 were cured with a useful limb; 9 are recorded as good joints, but still under treatment; 20 ended fatally; and 13 were subjected to subsequent ampu-

tation, of which 11 recovered and 2 died. 70 of the operations were, therefore, perfectly successful, and 48 failed; the fatal cases, the amputations, and those still under treatment, being included in the latter category.

The causes of death were as follows: The operation itself in 4 cases; pyæmia in 4; exhausting suppuration in 3; tuberculosis in 2; tubercular meningitis in 1; acute meningitis in 1; unknown causes in 5.

So far as could be determined from the reports, almost all the limbs healed through firm union of the bones of the leg and thigh; but, now and then, there was slight motion between the tibia and the femur. In both forms of union, however, the limb was useful. In only two cases, those of Langenbeck and Szymanowski, was there a movable joint; that of the latter surgeon being remarkable in that the subject of the operation was only seven months and a half old. In only a few of the cases is there any notice of the subsequent growth of the limb. In some it was progressing favorably, in others there was only slight deformity; thus showing that a part of the line of the epiphyses, at least, had been respected.

The pathological causes demanding the operation were as follows: Caries in 83; suppuration of the joint in 9; white swelling in 6; wounds in 8; contractions in 2; ankylosis in 1; necrosis in 1; deformity in 1; chronic inflammation in 1; unknown causes in 5.

A comparison of the results of resection of the knee in children, as given by the author, with the tables of other writers, speaks well for the operation. Thus the statistics of the procedure in children show that 62.5 per cent. were successful; 37.5 per cent. failed; and 19.6 per cent. were fatal. Other tabular statements give the following results in the same order: Hodges, 44, 56, 33; Heyfelder, 60.6, 39.3, 29.7; Price, 56.3, 43.6, 27. How far these results compare favorably with amputations of the thigh in children is unknown, as there are no statistics of the latter operation on which to base an estimate.

Dr. König adds some measurements in relation to the lines of the epiphyses, giving directions for the proper course of the incisions through the bony surfaces of the joint, by which the lines may be saved, thereby not interfering with the future growth of the limb. He also indicates the proper cases for resection when the limb is affected with white swelling, and says that amputation is only to be resorted to when the involvement of the bone is so extensive that four inches and upward would have to be excised. When the disease is less extensive, resection should be performed, although the age of the child carries great weight in deciding on the proper operation. Up to the tenth year, in case the entire epiphyseal line must be sacrificed, amputation had best be practised; since, under these circumstances, a useless limb will result from resection; whereas, if the greater part of the line can be saved, the latter is the preferable procedure, as in these cases the growth of the limb will not be materially interfered with. In children of eleven years and upward, provided the parts requiring removal do not exceed four inches, even if the epiphyseal line be included, resection should always be practised, as a tolerably useful limb may be looked for.

With respect to the general condition of the patient, he holds an enfeebled, anæmic constitution to be no contraindication; on the contrary, the little subjects rapidly recuperate their powers after the removal of the diseased joint. A strumous diathesis is no contraindication; but when there is well-marked tuberculosis, or amyloid degeneration of the viscera, no operative measure should be instituted.

In concluding this valuable and interesting paper, the author lays down some general rules in regard to the mode of operating and the after-conduct of the case. He places great stress on the removal of the diseased portions of the bone only, and holds that, as every particle of bone saved will be of future use, partial resections are preferable, the

exposure of the cartilage leading to no bad results. In two of his cases he removed the patella, and in two it was left in the flap; and, so far as his observations warrant the conclusion, it makes no difference in the progress, duration, and result, whether or not the patella be excised. He is convinced that absolute immobility is the most essential requisite of success, and that the mortality would be diminished, the duration of the cure greatly shortened, and the usefulness of the limb increased, if the gypsum bandage were applied immediately after the operation.

A Successful Case of Amputation at the Hip-Joint on account of Suppurative Periostitis and Osteomyelitis of the Thigh Bone.

By Dr. P. PETECHIN, of St. Petersburg (Langenbeck's Archiv, Band ix, Heft i, 1867, p. 250).

A weak, emaciated boy, aged seventeen, who had labored under symptoms of acute idiopathic osteomyelitis, and suppurative periostitis of the femur, with typhoid phenomena, for five weeks, was subjected to disarticulation at the hip, on the 6th of September, 1865. The operation was after the method of Lacachie. A circular incision was carried through the soft parts of the upper third of the thigh, and the bone was divided two inches below the great trochanter. A vertical incision was then extended on the outer side of the stump to two inches above the trochanter; the muscles, together with a portion of the thickened periosteum, were separated from the bone, and the latter seized with strong forceps and excised. Hemorrhage was controlled by digital compression of the femoral artery, and ten vessels required ligation.

An examination of the specimen revealed complete detachment of the periosteum from the condyles to an inch and a half above the middle of the bone. From the latter point to the neck of the femur, that membrane was much thickened, and its connections easily severed. In the lower third of the cancellous structure there were numerous small depots of pus. The head and neck of the bone were normal. The entire medulla appeared congested and enlarged. The knee was filled with pus, and the upper part of its capsule perforated. The femoral muscles were withered, softened, and bathed in foul pus. At the expiration of one month the recovery was complete. Although a portion of the periosteum had been left in the stump, there appeared to be no reproduction of bone; but the stump was endowed with sufficient mobility to render the wearing of an artificial limb practicable, and somewhat useful.

A Criticism on Chopart's Amputation.

By H. FREMMERT, of St. Petersburg (Langenbeck's Archiv, Band ix, Heft i, 1867, p. 21).

In this paper, Dr. FREMMERT enters into an excellent discussion on the value of Chopart's amputation, the greater part of the criticism being devoted to an examination of that exceedingly awkward complication, retraction of the stump, which will rarely occur provided attention be paid to the mode of operating, and to proper position during the after treatment. In order to prevent retraction of the heel, a moderately large and thick dorsal flap, the tendons not being cut too short, should be aimed at, and the tendo Achillis should never be divided as a measure of precaution. The stump is to be somewhat extended, and fixed by a gypsum bandage, as soon as possible after the operation, and the patient placed on the same side. If, in spite of these precautions, the deformity results, a proper apparatus may remedy it; but division of the tendo Achillis should not be instituted except in obstinate cases.

Dr. Fremmert, in concluding his paper, narrates the case of a woman, twenty-two years of age, in whom he performed the operation on both feet with excellent results, this being the third case of the kind on record. The patient was under observation for two years, and there was not the slightest tendency to deformity.

VI. TOPOGRAPHICAL SURGERY.

(a) HEAD, NECK, AND BREAST.

On the Indications and Contraindications of the Trephine.

A criticism in a discussion at the Paris Society of Surgery, by SIMON DUPLAY, M.D. (*Archives Générales de Médecine*, September, 1867, p. 333):

Like all great operations, trephining has, of late years, undergone many vicissitudes; and there is probably no procedure in the whole range of surgery that has led to so many contradictory discussions, or upon the value of which the opinions of the profession are so little settled. It is therefore interesting, and not less profitable, to note that the question as to its merits has recently been revived by a learned society, the discussion occupying not less than ten sessions, a brief summary of which we here reproduce. The members of the Society of Surgery of Paris, who took part in the discussions, were agreed that the operation was a useful one, and that its proper dangers were not at all comparable to the good that it might effect. MM. Léfert and Legouest, in particular, presented statistics, drawn from civil and army practice, which showed conclusively that the responsibility of the trephine in causing death was not so great as had been ascribed to it. The former surgeon adduced thirty-three cases, in which the trephine had been applied when the lesions of the brain were not serious. Of these, nine died; but three should be excluded, as the true causes of death were, respectively, rupture of the renal vein, multiple fracture of the ribs, with emphysema, and bony spiculæ driven into the brain.

The article is too long for reproduction, so that we confine our abstract to the selection of the following *résumé*, which bears the apparent sanction of the Society:

1. When there are no cerebral symptoms, the trephine should not, as a rule, be resorted to, except in compound fractures, and particularly those produced by gunshot, fractures with considerable depression of bone, fracture and detachment of the inner table of the skull, and when foreign bodies impinge upon or are driven into the brain.

2. When brain-symptoms are present, the operation should be performed, if they point to localized lesions; whereas, it should be abstained from if the symptoms are denotive of deep-seated and diffuse lesions.

3. The procedure is contraindicated where the stage of coma, along with insensibility, and often stertor, has persisted since the time of the injury; and the same rule is applicable when persistent general convulsions, with fever, delirium, and cephalalgia set in. The former condition implies serious and deeply-seated lesions of the brain, of themselves almost necessarily mortal; and the latter point to encephalitis developed about the contused or disorganized brain.

4. Symptoms of compression and local irritation, such as hemiplegia, epileptiform convulsions, and limited spasms of the paralyzed limbs, arising immediately or consecutively,

are a formal indication for the trephine, particularly if one recognizes a local lesion capable of explaining their development.

Finally, the operation is permissible, even when serious symptoms arise some time after the accident, as the only chance for life.

Compound Depressed Fracture of the Skull—Operation of Trephining resulting in Cure.

By HERBERT M. HOWE, M.D., of Philadelphia (New York Medical Journal, June, 1867, p. 210).

Dr. HOWE narrates an interesting case of recovery after primary trephining for compound depressed fracture of the frontal bone, which induced symptoms of compression. The patient was only three years of age, and the progress of the case was perfectly satisfactory.

Case of Gunshot Wound of the Brain.

By J. L. PRENTISS, M.D., of Lawrence, Kansas (Leavenworth Medical Herald, July, 1867, p. 51).

A young lady, 16 years of age, received a ball in her brain from the accidental discharge of a revolver, and was in a state of complete insensibility when seen by Dr. Prentiss shortly afterward. The missile penetrated at the anterior superior angle of the right parietal bone, producing an opening the dimensions of which were about one-half by one inch, and spiculæ were driven into the brain. There was no opening of exit. The spiculæ of bone were carefully removed, and about one ounce of the substance of the brain escaped. Cold water dressings were applied. On the following day, a large ecchymosis was observed in the right side of the neck, which extended down to the clavicle, from which fact Dr. Prentiss assumes that the ball had passed through the anterior lobe of the right hemisphere, perforated the base of the skull, and lodged in the cervical muscles. At the expiration of seven weeks, the patient had made a complete recovery, without any untoward symptoms, her mind and health being excellent. The only treatment that appears to have been adopted, was the exhibition of arterial sedatives and the local use of cold water.

Case of Gunshot Wound of the Brain.

By J. S. WASHINGTON, M.D., Indian Bay, Arkansas (Southern Journal of the Medical Sciences, August, 1867, p. 215).

The patient of Dr. Washington was a negro, æt. 22, in whom a ball from a revolver entered at the commencement of the left temporal ridge, traversed the brain, and lodged, as was presumed, at the junction of the opposite parietal and occipital bones, there being no orifice of exit. The man was seen directly after the injury, when he was laboring under symptoms of compression. He had lost about ten ounces of blood and one drachm of cerebral matter. At the expiration of five months, he was as well and hearty as before the accident, with the exception that there was partial aphasia, and he was unable to grasp a small object with his right hand. The treatment in this case consisted in the application of cold to the head, the administration of mercurial purgatives, and light diet.

On the Operative Treatment of Cysts of the Thyroid Gland.

By Dr. W. HAMBURGER, of Gabel, Bohemia (Wochenblatt der K. K. Gesellschaft der Aerzte in Wien, Nos. 30, 31, 32, and 33, July and August, 1867).

After a review of the different operations for the cure of cystic tumors of the thyroid body, including total and partial extirpation of the gland, ligation of the cyst, cauterization, simple puncture, iodine injections, ligation of the thyroid arteries, and excision of a portion of the cyst-walls, Dr. Hamburger strongly advises the resort to the seton as the least dangerous and most reliable of all. His experience in the treatment of these growths has been very large, and extends over a period of thirty years, during which he has treated many cysts as large as a child's head. In only one case, that of an enormous tumor, were there any pyæmic symptoms, and they were then referable to want of attention and necessary cleanliness. It is interesting to note, that in the part of Bohemia where Dr. Hamburger resides, the affection is endemic, and generally occurs in strumous subjects. His mode of operation is somewhat as follows:

A small puncture is made into the upper part of the cyst, and a probe, armed with a delicate strip of linen, inserted into the opening, and carried down to its lower limits. A counter-incision, from one-half to two-thirds of an inch long, is now made upon the blunt end of the probe, which is then carried through the tumor, and the seton deposited. The edges of the lower wound are kept separated by an additional strip of old linen, in order to prevent their union, and afford a free outlet for pus. A little charpie is now confined on both wounds by adhesive strips, and absolute diet and rest enjoined.

The resulting inflammatory fever is severe, but generally subsides in five or six days. Dr. Hamburger has occasionally observed congestion of the cerebral membranes result from the operation, but this has never proved fatal, and is readily controlled by leeches to the temples and ice to the scalp. Should the symptoms, however, continue, the seton must be withdrawn, but the incisions should be kept open by small tents. So soon as the constitutional irritation is subdued, the seton is to be drawn daily through the cyst, and tepid injections, chlorinated if necessary, thrown into the lower opening, until the distance between the two orifices measures only one inch, when the seton is to be removed. These wounds rapidly heal, and all induration disappears in a few months.

(b) EYE AND EAR.***Suture of the Flap after the Extraction of Cataract.***

By HENRY W. WILLIAMS, M.D. (Cincinnati Lancet and Observer, September, 1867, p. 844.)

Dr. WILLIAMS suggests that, after the removal of cataract by a flap operation, a single point of suture be inserted at the apex of the flap of the cornea, while the patient is still under the influence of ether. A single strand of the finest silk is employed for the suture, and very minute straight needles, less than a quarter of an inch in length, with flat cutting points, are preferred, as being best adapted to penetrate the corneal tissues. The armed needle is seized with strong forceps and passed through the edges of the wound, which are held with very delicate toothed forceps. Needles fixed in handles are objectionable, since it is extremely difficult to disengage the extremely fine thread, and in being withdrawn they draw upward the corneal flap.

Of twenty-four cases subjected to this treatment, in none did the stitch give rise to any serious symptoms, and only two were failures. In most instances the thread was allowed to come away of itself, and in some cases it remained for seven weeks, without giving rise to more than trivial irritation. The practice of Dr. Williams is to administer ether and

remove the suture within a week after the operation, if it has not sooner been eliminated. An attempt to withdraw the thread except during anaesthesia is deemed unsafe, as a sudden movement of the globe, or the pressure of the forceps, if fixation be resorted to, might, as once happened, cause reopening of the wound.

The advantages claimed for the procedure are as follows: It renders etherization more applicable to extractive operations, as it obviates the danger of loss of the vitreous humor, in case emesis should occur. The edges of the wound being retained in close apposition, primary union, a great desideratum in these operations, is rendered more certain. It nearly obviates all risk of spontaneous prolapse of the iris. By effecting a speedy re-establishment of the anterior chamber, it admits of the free use of atropia, without fear that prolapse of the iris may ensue, thus allowing continued dilatation of the pupil to be kept up, and lessening the risk of irritation of the iris from unremoved fragments of the lens, or torn edges of the capsule, or from proliferous degeneration of the intra-capsular cells. Finally, it much abbreviates the term of rigorous confinement of the patient, and shortens the entire period of convalescence.

A Method of Operating for Divergent Squint.

By C. R. AGNEW, M.D., Lecturer on Ophthalmic Diseases at the College of Physicians and Surgeons, New York (New York Medical Journal, July, 1867, p. 317).

Dr. AGNEW describes a new operation for divergent strabismus, the object of which is, by advancing the internal rectus, to place its shortened end in coaptation with the sclerotic at or near the natural line of sclerotic implantation. We extract the entire article, in order that it may be the more readily comprehended:

The patient having been placed upon his back, and under the full influence of an anæsthetic, and the eye to be operated upon exposed by the wire speculum, an assistant draws the cornea as much as possible toward the outer canthus by catching the tissues over the tendon of the external rectus muscle in the blades of a pair of fixation forceps. The operator then makes a horizontal opening over the internal rectus muscle, midway between its borders, and extending from a point one line distant from the cornea down to the semilunar fold. This opening should be made by lifting a vertical fold of the conjunctiva and subconjunctival tissues with forceps, and cutting it with scissors in a horizontal direction. If care is exercised, the internal rectus muscle will be exposed without any difficulty, or the occurrence of much bleeding. The next step is to secure the entire tendon of the muscle which is to be brought forward. This is especially essential in those cases in which the divergent squint has been the result of the operation for convergent squint, for in such cases the tendon and theca, having been much haggled in the original tenotomy, fall back irregularly, and, being split more or less, form false insertions, which are zigzag or interrupted.

After the apparent insertion of the muscle has been brought into view, a strabismus hook, having an eye drilled in its free extremity, and armed with a waxed silk, is made to sweep beneath it, from below upward, care being taken to keep the instrument in close contact with the sclerotic and carried so far back as to include every straggling band of muscle or theca which is to be advanced.

The uplifted mass should then be tied close to its sclerotic implantation. The next step is to divide the external rectus muscle freely through a horizontal wound in the conjunctiva, and thus complete the preliminary steps for the advancement of the internal rectus. The latter step is effected as follows: The operator, holding the ligature firmly in one hand, should cut with scissors the insertion of the muscle and gently break up any

bands of connective tissue, which may attach it to the sclerotic. As he does this, he should draw upon the ligature and sway it from side to side until it becomes evident that any adhesions which might obstruct the advancement of the muscle, have been overcome. He should now estimate the amount of adduction which may be necessary to cure the divergence. This he can do by catching with forceps the sclerotic edge of the cut tendon of the external rectus and drawing the cornea toward the inner canthus, while he holds upon the stretch the muscle to be advanced. The retentive sutures are now to be placed. For this purpose two delicate, short, and sharply curved needles are to be armed with fine, well-waxed silk, and adapted to a needle-holder.*

Having measured the extent to which the eyeball must be adducted in order to correct the divergence, the sutures should be passed as deep in the muscle and theca as may be necessary. The muscle and theca should be drawn well out and kept upon the stretch, so that the sutures may be passed as deeply as possible behind the caruncle, to secure a firm hold, and to leave a somewhat longer mass between the perforations made by the sutures and the ligature upon the cut end of the muscle than the original divergence measured. The course of the sutures should be perpendicular to the plane of the muscle, one passing through near its upper margin, and the other near its lower. After the sutures have been placed in the muscle the end included in the ligature should be cut off, care being taken to leave enough to prevent their tearing out. The amount cut should nearly equal the degree of divergence to be corrected, allowance being made for shrinkage which has followed the detachment of the muscle from the sclerotic. The next step is to carry the sutures beneath the conjunctiva above and below the cornea. It is better to place the upper suture first. This also requires a curved needle. The point aimed at in carrying the needle along the sclerotic, beneath the conjunctiva, should be about a line above the cornea and over the centre of the line of implantation of the superior rectus muscle, and there the suture should emerge. Before tying the upper, the lower suture should be brought out at a corresponding point over the inferior rectus insertion. While the operator is cautiously tying the sutures, his assistant should, catching hold of the insertion of the external rectus, carry the cornea toward the internal canthus as much as possible, and thus effect what may be considered the real intention of the operation, namely, to adduct the eye strongly, and place the end of the *shortened* internal rectus in coaptation with the sclerotic at or near the natural line of sclerotic implantation. The exercise of a little care will cause the muscle to spread out and be hidden behind the horizontal pillars of the wound, through which the retentive sutures have been carried, and thus insuring a consolidation of the wounded parts, obtain the aid of the subsequent cicatricial contraction of the soft parts intervening between the cornea and the caruncle in the ultimate result. Whether this method be adopted throughout or not, I am quite sure that the use of the strabismus hook, armed with a ligature, will be found of great advantage in getting control over the tendon to be advanced, and making the surgeon feel sure that he has secured the entire mass. I have employed the method upon two eyes which had been rendered divergent by operations for convergent squint performed by a wandering quack. In one of these eyes the divergence was more than five lines; in the other about four. In the first eye I induced a small amount of convergent squint, which was cured by applying the glass, which neutralized existing hypermetropia. In the second case I produced a very slight degree of convergence, not exceeding a line, which was also removed by the use of the proper glasses. And in both these cases the existence of hypermetropic asthenopia would have rendered glasses necessary, aside from any convergence.

* The needle-holder of Dr. H. B. Sands, New York, is decidedly the best for this purpose

I have also satisfactorily performed the operation in two cases in which slight paresis of the internal rectus, the result of injury, had led to divergent squint.

In one case, in which the divergence was so great that one-fourth of the cornea was buried beneath the external canthus, the result was only partially successful; but I propose to repeat the operation after the cicatrix over the region of the internal rectus has so matured and softened as to render a repetition of the steps possible.

I have not seen any inflammation of an annoying character following the procedure, and my experience thus far justifies me in employing the method in preference to any other, as I believe that the risk to the eye is very much less than by any other, and the probability of success greater. I believe that the chance of success is greatly increased by dividing the external rectus of the fellow-eye, even though you propose to advance the internal rectus of one eye only.

Sulphate of Soda in Spots on the Cornea.

M. DOMINIQUE DE LUCA, Director of the Ophthalmic Section of the "Incurable" Hospital at Naples, sends a paper to the Academy of Sciences, "On the Employment of Sulphate of Soda in the Treatment of Spots on the Cornea." He says that crystallized sulphate of soda, by reason of the property it possesses of maintaining in solution the fibrine of the blood, can exercise a favorable action on spots on the cornea. In his first experiments he made use of an aqueous solution of the sulphate saturated in the cold, and let fall, drop by drop, on the eyeball. This acted slowly, so the sulphate reduced to a fine powder was used instead. This was let fall, by pinches, on the eye twice a day, the head resting nearly horizontal. The salt is dissolved in the humors of the eye, at the same time producing an agreeable sensation of cold. At the end of a few days the spots commence to disappear, and the patients who could not see at all distinguish the movements of the hands and fingers, and the blindness soon ceases.

The Minute Structure of the Iris.

MR. ERNEST HART, at the Queckett Microscopical Club, read a paper "On the Minute Structure of the Iris and Ciliary Muscle," in the course of which he demonstrated the structure and direction of the ciliary or accommodative muscle of the eye in man, in ruminants, and in birds, and showed that there are presented no circular or sphinctral fibres in the latter, and discredited their existence in the former. The paper was illustrated with enlarged diagrams, and numerous injected specimens under the microscope.

The Ophthalmoscope and the Physician.

J. ROSE SOLOMON, F.R.C.S., of Birmingham (*British Medical Journal*, June 1, 1867, p. 628), says, that an increased desire on the part of the physician to obtain a clear view of the optic nerve, by means of the ophthalmoscope, has arisen since it has been determined that certain cerebral diseases afford pathological signs in that nerve.

Many students get so far with the instrument as to be able to reflect and maintain the light of the lamp upon the eye of the patient, to apply their own organ of vision to the aperture of the mirror, and to bring the convex lens to a proper distance in front of the observed eye, yet without obtaining a definite outline of the optic nerve entrance and its vessels. At this point so often do they stick, that at last, after repeated trials, the instrument is put aside as an instance of the *non possumus*.

This is owing to the inability of the physician to properly relax the accommodation of his own eye.

I find all impediment to focussing of the fundus to be at once overcome if the student suspend the power of accommodation of his right eye by the application of a four-grain solution of atropia (*British Pharmacopœia*) half an hour before making his ophthalmoscopic examination.

This being done, and the iris of the patient fully dilated, he has only, after having observed the usual rules laid down in ophthalmic works, to gently move his head a little backward or forward, as the case may be, and a complete picture of the optic nerve and its surroundings starts into view.

The physician will do well to select a case of extreme short sight, atrophy of the optic nerve, or a light blue normal eye, for his first experiment, and continue his observations every day. By the time the action of the atropia has subsided, he will, if endowed with good vision and some manual tact, find himself master of a step in ophthalmic investigation which had hitherto been considered by him as insurmountable.

Increase of Temperature of Glaucomatous Eyes.

The Florence (Italy) correspondent of the *Richmond Medical Journal*, July, 1867, p. 60, says:

Dr. CONTI was led to suspect that there was an increase of temperature in the aqueous humor of glaucomatous eyes. To ascertain this, he had a thermometer constructed of extremely small dimensions, which fitted into what we call a minute glass spoon. The handle of this spoon consisted of a tube large enough to hold the tube of the thermometer, while the concave part of the spoon, representing a segment of a sphere, contained the bulb of the thermometer. Dr. C. now makes the *paracentesis corneæ*, while an assistant inserts this little apparatus between the eyeball and the lower eyelid, turning its convexity toward the eyelid, so as to gather the aqueous humor round the bulb of the thermometer.

This experiment, as may be imagined, is a very delicate one. Dr. C. performed it only three times, but these three observations have fully borne out the truth of his clever hypothesis, showing an excess of temperature of $2\frac{1}{2}$ – 3°C . (5 – 6°F .) in the aqueous humor. This presupposes an inaction (brought on by paralysis or atrophy) of the ciliary nerves, and as, according to Dr. C., the necroscopic examinations of glaucomatous eyes always show these nerves to be in a state of thorough atrophy, he comes to the conclusion (though he expresses himself with great modesty and reserve), that glaucoma is caused by a neuralgic (perhaps rheumatic) affection of the ophthalmic branch of the trigeminus, which affection reflects and propagates itself, through the ciliary ganglion, over the whole of the ciliary nerves, their sensitive fibres as well as their sympathetic or vasomotor ones, thus affecting gradually the sensitiveness, circulation, and nutrition of the whole eye, and producing that complex group of symptoms called glaucoma. As to its treatment, Dr. Conti has, as yet, nothing better to suggest than *iridectomy*, the method first proposed by Graefe.

Pulsating Tumor in the Orbit, cured by Ligation of the Common Carotid Artery.

By JOSEPH BELL, F.R.C.S., Ed. *Medical Journal*, July, 1867.

Adam Moffat, æt. 42, was knocked down by an omnibus, and he thinks a wheel passed over his head; his lower jaw was fractured. At present, the left eyeball is projected

quite out of the orbit, and the cornea protrudes beyond the vertical plane of the bridge of his nose. Both eyelids are stretched and everted. A tumor in the orbit has a distinct pulsation synchronous with the heart, and can be diminished in size by pressure, and is soft. The supra-orbital artery and vein are both very much enlarged and tortuous. The artery, nearly as large as the radial, pulsates feebly. There is a well-marked aneurismal bruit to be heard all over the head and neck, which apparently centres about the back of the orbit. It is distressingly audible to the patient, resembling the measured beat of an engine.

Dr. Bell tied the common carotid artery just above the omo-hyoid. Three hours after the operation, pulsation in the tumor was almost gone, and the eye already less prominent, and twenty days after the operation, returned home quite comfortable and able to read large print without glasses.

Intraocular Tumor.

At a meeting of the Chicago Medical Society (*Chicago Medical Journal*, October, 1867, p. 475), Dr. HOLMES exhibited a singular intraocular tumor which he had removed from a male patient, 40 years of age, at the Chicago Charitable Eye and Ear Infirmary. He had experienced, for two years, quite extensive dimness of vision in the right eye without any known cause, and without change in the appearance of the eye.

Suddenly, in the early part of July last, he was seized with a most violent pain in the eye, which was so persistent as to resist the skill of his physician and impair his general health.

On entering the infirmary a few days since, the eye was found soft, on palpation, exceedingly painful and tender, the anterior chamber being filled with blood. The diagnosis was uncertain.

Extirpation of the globe was considered necessary, not only to relieve the distress of the patient, but also to prevent disease of the other eye.

At the lower and nasal side of the fundus, was a smooth and spherical tumor, about a fourth of an inch in diameter. At the lower portion of the fundus was a crystalline lens, opaque, but round in size, and partially involved in the substance of the tumor. The lens had evidently become spontaneously dislocated, in consequence of the atrophy of the zonula of Zinn, and the dissolution of the vitreous humor.

The iris and ciliary bodies were so atrophied, that the pupil was equal in size to the cornea.

The space between the cornea and tumor was filled with a thick bloody fluid.

The retina and choroid were partially detached from each other, the latter being also detached from the sclerotic.

Dr. Lyman describes the microscopic character of the tumor as follows :

The cells are of an oval shape, pretty uniformly resembling the pus-cell in size and superficial aspect, but not presenting the distinct nuclei of the pus-cell when treated with acetic acid.

There are numerous minute fat-globules, and plates of cholesterine.

Tumor of the Choroid.

Dr. HOLMES exhibited before the Chicago Medical Society (*Chicago Med. Journal*, September, 1867, p. 435), an eye of a patient at the Chicago Charitable Eye and Ear Infirmary, 52 years of age, who had suffered two years most violent pain in and around

the orbit. The globe was soft to the touch, the pupil occluded, iris discolored, conjunctiva congested, but not oedematous; vision had long been totally extinct. The diagnosis was doubtful. As all efforts had failed to relieve the pain, it was deemed best to extirpate the globe. Within it was found a well-defined, hard, very dark-colored tumor, three-eighths of an inch in diameter, almost spherical in form, attached to the choroid, at its outer and posterior portion, near the optic nerve. It was composed of a fine granular mass, with pigment cells.

A Case of Traumatic Aneurism of the Orbit, in which the Common Carotid Artery was Successfully Tied.

Dr. J. Z. LAURENCE communicates the following case to the *Ophthalmic Review* for October, 1867.

Jas. G., 41, applied at the Ophthalmic Hospital, Southwark, Monday, January 21, 1867. He was an habitual drunkard. On the 13th he drank a great deal of gin and water, and about a pint of neat brandy, continuing drinking from 1 o'clock in the day of the 13th, till about 3 o'clock in the morning of the following day. He was taken home, at a quarter to 4, in a state of helpless intoxication; and during his staggering journey he fell down several times on the curb-stone, on the back of his head, where there was a small wound. On arriving home he fell down in the passage, and there his wife let him lie; at this time he vomited considerably, and his wife noticed there was something amiss with his left eye. The vomiting continued off and on for nearly a week, a circumstance never before noticed. After lying in the passage about three hours, he had sufficiently recovered from his stupor to complain of an aching pain in the left side of the forehead. His wife then noticed the left eye very slightly protruded, but at 8 o'clock it was much more so—the eye was not red. On the same day he had a fit, which lasted about ten minutes; he was insensible, convulsed, had stertorous breathing, and was flushed like crimson. He afterwards slept deeply for two hours. No loss of power in the limbs was observed.

On January 21st he was seen by Mr. Moon, the house-surgeon, who noted as follows:

Great proptosis and complete immobility of the left eyeball; complete ptosis. No pain on pressing the eyeball backward; pupil 2" fixed; perception of light; great chemosis of conjunctiva. Mr. J. Z. Laurence saw the patient on the 25th for the first time, the case being referred to him as one of "orbital cellulitis." It certainly presented the appearances of such a case; but after hearing the history, Mr. Lawrence thought it might be a case of traumatic aneurism of the orbit. Pulsation was then found in the eyeball. The following notes were then taken:

The eyeball pulsates forward, and synchronously with the pulse at the wrist; the pulsation is completely stopped by pressure on the carotid; a distinct blowing murmur can be heard over the eye synchronously with the pulse. This murmur became more distinctly defined at a later period; it extended from the eyeball over the left temporal and parietal, the frontal and right parietal regions; it was loudest at a spot about two inches behind the left external canthus. The man complained of a blowing sound, "like that of a pair of bellows," at the left temple, which ceased at once when the left carotid was compressed. At the same time, we found that the bruit ceased in all the parts where we had before remarked it. The whole eyeball was considerably thrust forward, and apparently enlarged. The pupil was dilated; the details of the fundus oculi presented no especial characters.

Treatment.—The effect of compression was first tried. The common carotid artery was

compressed by the tourniquet, figured in Weiss's Catalogue of 1863, plate i, fig. 6, as "Skey's Tourniquet." Pressure was applied for twelve days almost constantly. The effects of the pressure, when accurately applied, were: the pulsation and the bruit almost entirely ceased; the eyelids became more flaccid, paler, cooler. Much difficulty was encountered in maintaining continuous, effectual compression, without interfering with the patient's respiration. Nevertheless, thanks to the tractability of the patient, the compression treatment was, on the whole, effectually tried. Its action was assisted by the application of ice to the tumor, and the internal administration of ten-drop doses of tinct. digitalis, and of liq. opii sed. every third hour for two days, when it was found necessary to discontinue the digitalis.

But the tumor continued to increase, repeated epistaxis occurred, the patient's health was giving way, and with the advice of Professor Quain and Mr. T. Carr Jackson, it was determined to ligate the carotid. On February 9th, the artery was tied in about twenty minutes. Immediately after the artery was tied, the pulsation in the orbit was stopped, and the protrusion of the eyeball slightly diminished. The patient did well, ligature came away six days after the operation; all the wounds were healed, except at the point of the ligature. On March 28th he was discharged. There was a long linear scar, quite healthy in appearance. The pulsation in the carotid was visible and palpable from the clavicle upward to within an inch of the lower edge of the scar. There was complete ptosis of the left upper lid, the skin of which was slightly congested; the cornea was clear, the pupil irregular, and adherent posteriorly to the lens capsule. The globe appeared decidedly enlarged with great venous congestion of its tunics. No details of the fundus were seen with the ophthalmoscope, but there was, however, a fair reflex. The lens was generally slightly clouded; there was no movement whatever of the globe.

June 26th, 1867, the eyeball had completely retreated into the orbit, the ptosis had all disappeared, the movements of the globe were nearly perfect; all vision was lost. The voice, which had failed him since the operation, had returned, but was still husky.

The diagnosis was rupture of the ophthalmic artery, at or near its origin from the internal carotid, leading to effusion of blood within the orbit. Mr. Laurence thinks this rupture was caused by some fracture of the base of the skull in the neighborhood of the optic foramen, the artery having become perforated by a spiculum of bone.

It was thought that the compression treatment first adopted materially assisted in establishing the collateral circulation and to this circumstance was ascribed the complete absence of any cerebral symptoms after ligature of the artery, which in several recorded cases have been the immediate cause of a fatal result from the operation.

The carotid artery was ligated for an intra-orbital aneurism first by Travers, in 1804—sixty-three years ago. Since that time it has been performed twenty-one times; fifteen have been successful, two incompletely successful, one unsuccessful, and two have died, or 10½ per cent.

The Action of Belladonna in Diseases of the Cornea,

Is the title of a paper by Dr. JOS. S. HILDRETH, of Chicago, Illinois, published in the *Transactions of the American Medical Association*. From numerous observations, in affections of the cornea, he concludes that belladonna is indicated when anæsthesia and diminished dilatibility of the pupil is present. It is not required with normal dilatibility and absence of corneal anæsthesia. Division of the ciliary ring is often required to enable the drug to take effect. The relief of corneal anæsthesia and diminished dilatibility in these cases is due to the result of a thorough division of the ring, and not to

evacuation of the aqueous humor, as claimed by some. In one instance, contraction of the ciliary ring was found to coexist with glaucoma, and while iridectomy removed all intraocular tension, it failed to relieve the corneal anæsthesia. Division of the ciliary ring, fifteen minutes afterwards, at once accomplished that result.

Ophthalmic Medical Congress.

Mr. J. Z. LAURENCE, of London, read a dissertation on the "Extirpation of the Lachrymal Gland" as a radical method of treatment of lachrymal disease. In support of this, he presented twenty observations, all most scrupulously studied.

A lively and interesting discussion followed on this question, for and against; and the partisans of each method urged the obliteration of the sac as recommended by Nannoni, and the gradual dilatation of the nasal canal, after the method, more or less modified, of Bowman. The plan, indeed, of Bowman, appeared to be preferred by most of the assembly in preference to all others, as the most satisfactory in a great majority of cases.

M. GRAEFE arose to communicate three new surgical procedures :

The first has for its object the *division of the optic nerve*, in those cases of subjective, luminous sensation remaining in certain diseases, to the loss of the eye and the cause of grave trouble so far as the life of the patient is concerned.

The second consists in the *partial tenotomy of the elevator palpebris superioris*, in the disease of Basedow : (the contraction of this muscle has been recognized as one of the habitual complications of this affection.)

The third, finally, has reference to the latest modifications, suggested and applied by this eminent professor in the method of *linear extraction of cataract*. This modification consists in the suppression of every tractor instrument for extracting the crystalline. Since the introduction of this modification, the number of cases of proclivencia of the vitreous body has been diminished from 14, to 3 in 100.

In the name of M. ROBERT HONDIN, M. GIRAUD-TEULON, presented a series of instruments, of a rare perfection, having for their object, the first, the observation of eutoptic images of the eye; the second, the determination of the most feeble movements of the pupil under the influence of light; the third, the production and easy observation of the vascular retinian tree of Purkinje; the fourth, is intended for measuring the degree of vision over the most extended plain. The instruments received the highest testimony, especially from Helmholtz.—*Gazette Hebdomadaire*, Sept. 13th, 1867.

Amaurosis from Lead Poisoning—Treatment by Subcutaneous Injections of Morphia—Recovery.

The patient was a painter, who, since 14 years of age, had used water colors in his vocation. Up to seven years ago he was always healthy, but, in 1860, was affected with lead colic, from which he recovered after eight weeks' treatment in a hospital. The attacks of colic appeared chiefly if the patient sat down. The principal symptoms when in the hospital were nausea and loss of appetite. The visual power was unaffected, and there was no paralysis. After leaving the hospital the patient was able to return to his occupation, until the end of June, 1866, when a new attack occurred. There were then severe attacks of colicky pain, which were very severe for three days. On the ninth day, as the colic was disappearing, and the patient considered himself well, he suddenly observed a loss of vision. Sometimes it was very dark, and again very bright, before the

eyes. In the same day the vision became less and less. In the evening the patient could see to go about; but in the morning after, on awaking, he was entirely blind in both eyes.

An examination of the eyes was made in the afternoon with the following result: On both sides a trace of quantitative perception of light, the pupils somewhat dilated, and react sluggishly. The ophthalmoscope shows the retinal vessels to be somewhat more filled up than normal. The ocular muscles seem to act well. The patient complained of a sweet taste in his mouth; the gums have a bluish color. An artificial leech was ordered to be applied every evening, and the patient is to continue an opiate which he is taking. In the course of a few days the vision was so much improved that the patient could go about alone with some difficulty. Visual field, which was covered with a dense cloud, could not be made out.

On the sixth day the patient could read No. 17. An examination as to the presence of albumen in the urine gave a negative result. Nothing abnormal detected with the ophthalmoscope. One-sixth grain of morphia was injected in the temple in the morning.

This treatment was continued up to the thirteenth day after the blindness, when his visual power was expressed by the fraction $\frac{1}{3}$. This improvement continued some months after, when the patient was again seen. But there was insufficiency of the *recti interni*, and the patient stated that he could not distinguish colors as well as formerly, so that he had been obliged to give up his occupation as painter, which he had been formerly urged to do.

As a rule, amaurosis from lead allows a favorable prognosis. According to Tanguerel, opium has the first place in the treatment, since it usually shortens the duration of the disease, and makes relapses, paralysis, and central diseases less frequent. The ophthalmoscopic examination gave no explanation of the blindness that appeared so suddenly. Bright's disease of the kidneys, or a similar appearance, as some French authors have found, could be here certainly excluded. We do not know what effect preparations of lead have upon the optic nerve and retina, but we can certainly believe that changes visible with the ophthalmoscope do not appear.—*Dr. G. Huase, in Klinische Monatsblätter für Augenheilkunde, July and August, 1867.*

Extirpation of Lachrymal Gland.

Mr. J. Z. LAURENCE, of London, has now extirpated the lachrymal gland in twenty cases for the cure of obstinate inflammation of the lachrymal sac. The patients were from 1 to 25 years of age. The author is very well satisfied with the results. All the cases had been previously treated by other methods for running over of the tears. The lachrymation ceased, and the moisture of the eye remained normal.

Dr. WEECKER, of Paris, remarked that he had once written a dissertation on extirpation of the lachrymal gland, under the advice of Textor, and that the latter had advised him to perform the operation whenever he had an opportunity, but that he had never seen the necessity for it.

Professor ARLT, of Vienna, was also opposed to the proposed method. He did not think the extirpation of the lachrymal gland for a disease of the lachrymal sac was justifiable. He believed there was danger of suppuration in the orbital tissue, and even danger to life. Besides, only the upper lachrymal gland could be extirpated, since the lower one could not be reached without considerable injury to the conjunctiva.

Arlet declared himself so satisfied with Bowman's method of dilatation of the nasal duct

by means of systematic probing, that it was in very rare cases that he did not attain the desired result with this treatment. He had only been compelled to resort to destruction of the sac by the actual cautery in three or four cases. Arlt laid great stress on a very delicate manipulation with Bowman's probes, and said that care must be taken not to advance too quickly to larger numbers. The means only act mechanically, of course, and cannot, therefore, directly remove a morbid condition of the lachrymal sac, or any caries of the bone. According to Arlt's experience, caries is a very rare affection. He himself had only seen its spontaneous development five or six times, once after syphilis, and in all the other cases from instrumental injuries of the lachrymal passages, through clumsy probing.

Mr. LAURENCE replied that others as well as himself were not so well satisfied as Professor Arlt with Bowman's method. In all the cases where he had resorted to extirpation of the gland, Bowman's method had proved ineffectual after a long treatment. He admitted the impossibility of removing the lower lachrymal gland without injury, but he put his experience against the presumption of Arlt, that lachrymation would still occur if this were not also removed. He had never seen any suppuration in the orbital tissue following the operation.

Drs. CEROGRA, DELGARDO, and CARGRA, of Spain, advocated obliteration of the lachrymal passages, as better than all other methods of treatment.

GIRAUD-TEULON and WARLOMONT, of Paris, deduced, from the discussion on this subject, the conclusion that the question involved was not one of principles of treatment, but of two great classes of facts which might possibly depend on climatic or similar conditions. Undoubtedly, by the conservative method, that is, progressive dilatation of the lachrymal passages, a great number of cures are obtained, but in other cases, and in other quarters of the globe, the destruction of the lachrymal passages furnished excellent results. The warm climate had a great influence in subduing the epiphora apt to remain after destroying the passages. We all know that epiphora is much more troublesome in winter than in summer.—*Ophthalmological Congress, in Paris, August, 1867, from Zehend's Monatsblätter, Sept. 1867.*

Division of the Optic Nerve.

Professor A. VON GRÆFE recommends the division of the optic nerve, which he had formerly advised in sympathetic ophthalmia, under a mistaken idea as to the nature of the affection, in cases where patients are very much troubled with light and fire symptoms (phosphenes) in eyes which have become blind, for example, after detachment of the retina, or irido-choroiditis with calcareous degeneration. He related a striking case, in which there were visual hallucinations as well as paroxysms of the appearance of phosphenes. He also advised division of the nerve in the case of intraocular tumors as a preliminary to enucleation. We may then remove a larger portion of the optic nerve, since it can be divided some distance behind the eye, and we may assure the patient in respect to the danger, that he is in less danger from relapses.—*Ophthalmological Congress, Paris, August, 1867, l. c.*

Statistics of Graefe's Operation (Modified Linear Extraction) for Cataracts.

Dr. O. BECKER reports 217 cases of extraction of cataract, performed at the Vienna Eye Clinic (Professor Arlt's) by Græfe's method.

The operation was in general performed according to Græfe's method, except that an

assistant and not the operator himself cut off the iris, and the capsule of the lens was opened by a sharp iris hook.

Besides the above, 20 eyes were operated upon in a little different manner, the section being made below. Of these, 4 eyes were completely lost.

Of the 217 extractions by Graefe's method, 35 times the spoon was used to remove the lens. In all the remaining cases, the operation was completed without entering an instrument into the wound. 30 times escape of vitreous occurred; 7 times there was an unusual hemorrhage, generally connected with alteration of the structure of the iris. Yet the most of these cases furnished a good result.

The varieties of cataract were as follows :

Laminated Cataract,	2
Unripe,	36
Ripe,	100
Overripe,	58

These furnished the best results of all.

Complicated cases (Glaucoma, detachment of retina, irido-choroiditis), . . 21

After-treatment.—Iritis occurred 30 times, reckoning the slightest conditions of irritation in this. Irido-choroiditis and chemosis, 9 times. In all of these cases there was some irregularity in the performance of the operation, and 7 of the eyes were almost entirely lost.

Suppuration was observed 5 times after a normal operation. 12 eyes were thus lost in the 217 cases.

A supplementary operation was required in 15 cases. There were also 6 cases in which a subsequent operation was necessary, but the patients declined it. The iris became adherent to the canal of the wound 35 times.

The period required for the after-treatment by the previously employed methods was on the average 28 to 30 days. No patient was removed from observation before the sixteenth day.

In the method now employed, the average duration of after-treatment was 17½ days.

SUMMARY.

Suppuration occurs in	5 cases.
Only sensation of light remaining,	7 "
Perfect result,	176 "
Cases where a subsequent operation would have brought a good result,	6 "
Visual power less than one-tenth,	23 "
	<hr/> 217

83 per cent. of perfectly good results.

Professor Knapp, of Heidelberg, reported 83 cases with 66 cures, or more than three-fourths successful.

Dr. Hüring reported 77 cases, and 57 with good result.

Dr. Kanka, Pressburg, 32 cases, 24 successful.—*Proceedings Oph. Congress, Zehendt's Monatsblätter, l. c.*

Clearing up of Cataractous Operations of Lens by Electricity and Internal Medication.

Dr. FAYE, of Christiana, Sweden, reported that his left eye had been pronounced cataractous, by a competent young ophthalmologist, with affection of the vitreous humor. He was 61 years old, and his vision, which was formerly excellent, became reduced to simple

perception of light and darkness. In order to avoid the dangers of an operation, Dr. Faye tried various methods of treatment. He used for a long time the constant current of electricity. For five months he used a cold douche upon the head, and used internally a solution of bromide of potassium. In the course of this treatment, the vision improved to such an extent, that he was now able to read ordinary type.

A weak constant current of twenty elements was applied twice a week, for five or six minutes at a time, through the eye. The negative pole was applied by means of a moistened sponge upon the eyelid, and the positive electrode in the neck, or the anterior part of the head.

There was no doubt as to the existence of a cataract in the left eye, although there may be some doubt as to the participation of the vitreous humor in the affection.—*Proceedings of Oph. Congress, Paris, Zehendt's Monatsblätter, l. c.*

The Nerve of Accommodation.

The nerve of accommodation has been hitherto unknown. It is well known that, in accommodation for the near point, the eye undergoes several changes, such as contraction of the pupil, projection forward of the pupillary margin of the iris, retraction of the equatorial margin, and a shifting and diminution of the Sanson's image reflected from the anterior surface of the lens. The most important of these changes is the increased curvature, or projection forward of the anterior surface of the lens which the change in the Sanson's image renders visible. The author used this phenomenon as the test of accommodation, and in order to determine the nerve that governs the function. He says expressly "the nerve," since his experiments show that only a single nerve is concerned. He observed the Sanson's image reflected from the anterior surface, and irritated by turns all the nerve trunks proceeding to the eyeball. The trunk that when irritated, produced movement and diminution of the image reflected from the anterior lens surface, the author considers to be the nerve of accommodation.

The following are the results :

1. In mammalia (dogs, cats, and rabbits), no change was produced in Sanson's image by irritation of the third nerve of the sympathetic, or of the fifth.

2. In birds (pigeons and hens), irritation of the third nerve, and of this only, produced a marked change in the position and size of the images, leading to the conclusion that in birds, the third is the nerve of accommodation.

3. The negative results obtained from dogs, cats, and rabbits, may be explained by supposing that, in these animals, the accommodation is either deficient, or performed in a different manner from that of men and birds. In rabbits the power is probably wanting, a view supported by the absence of muscle in the ciliary zone, which consists of connective tissue only. In dogs and cats the existence of the power may be inferred from the presence of a ciliary muscle; but the facts (*a*), that the relative sizes of the reflected images are different in them from their relative sizes in men and birds (*b*), that they possess only radiating and no circular fibres in the ciliary muscle (*c*), that in dogs the pupil dilates for near and contracts for distant vision, supports the belief that in these animals the function differs in its arrangement from that in men and birds.

The paper concludes by an account of some further experiments after iridectomy, intended to show, and showing, that the ciliary muscle is the active agent in the accommodative change. In one of these experiments the cornea and iris were removed, and then electric excitation of the third nerve was followed by a projection forward of the uncovered lens.

The author states positively that the third nerve is the nerve of accommodation, and the ciliary muscle the muscle of accommodation.—*Dr. Von Trautvetter, of Kien, Oph. Hospital Reports*, vol. v, part i. Translated from *Archiv für Oph.*

Suture in Cornea after Flap Extraction.

It is well known that Dr. H. W. WILLIAMS, of Boston, proposed some time since to place delicate sutures in the cornea after flap extraction of cataract. He now reports seventeen cases in which this procedure has been adopted. The results have been very satisfactory. It is also stated that in nearly a hundred cases in private practice, the method in question has been employed. No harm has ever been seen to result from the use of the suture. The advantages claimed are as follows :

1. The lips of the corneal incision being maintained in contact, unite with more certainty by primary adhesion, and ulceration of their edges is less likely to occur.
2. The early cohesion of the wound greatly lessens the chances of prolapsus iridis.
3. The prompt re-establishment of the anterior chamber renders it possible to make use of atropia, without fear of inducing hernia of the iris; and by so doing to avoid irritation from fragments of cortical substance, or of capsule which may remain in the field of the pupil or posterior chamber, thus diminishing the risk of irido-choroiditis.
4. The necessity for mutilation of the iris, or the repeated introduction of instruments for the removal of the lens from the eye is avoided, and flap extraction is rendered safer than some recently proposed methods, whether they are combined or not with iridectomy.
5. The surgeon may, if he wishes to do so, make daily examination of the condition of the eye; he may instil solutions of atropia to keep up dilatation of the pupil.
6. The patient may be less restricted to his bed after the first twenty-four hours.

The mode of inserting the suture is as follows : After extraction of the lens, the centre of the corneal flap is held by a delicate pair of iridectomy forceps, while a fine needle one-fourth of an inch long, having a flat cutting point, and carrying a single strand only of the finest glover's silk, is passed through it as near as possible to the edge. The opposite edge of the wound is then seized in the same manner, and the needle is passed through at a point corresponding with the insertion of the suture in the flap; a short but strong pair of forceps is used as a needle-holder, the blades of which are roughened at their extremities. The suture is then carefully tied, and when the silk has been waxed, a common double knot has been found sufficient, without a resort to the surgeon's knot so-called. This knot is removed in from a week to ten days after the operation. Ether should be administered in doing this on intractable patients. It may be left in some cases. The author saw the knot remain *in situ* seven weeks in one case.

Anæsthesia induced by sulphuric ether, occasionally reinforced by chloroform, is used by Dr. Williams in the performance of his cataract operation.—H. W. WILLIAMS, *Boston. Ophthalmic Hospital Reports*, vol. vi, part i, September, 1867.

Retinitis associated with Bright's Disease.

At a meeting of the Chicago Medical Society (*Chicago Medical Journal*, October, 1867, p. 474), Dr. HOLMES reported the case of a young man, from the country, aged 19 years, who consulted him in reference to dimness of vision, which he had experienced during convalescence from a severe illness. From the description of the patient it appeared that the disease was typhoid fever. Vision was so impaired that the patient could scarcely conduct himself with safety in the street. By simple inspection the eyes appeared perfectly normal. With the aid of the ophthalmoscope, the retina of each eye was shown

to be in a condition of extreme congestion, being dark red, the vessels engorged, the optic nerve disk being absolutely obscured. There were a very few points of blood extravasated from the capillaries. The urine was found to be perfectly transparent, like pure water. Both nitric acid and heat precipitated a very large amount of albumen, causing the urine to look like milk. There was little derangement of the heart's action. The patient died soon after returning home.

Dr. Holmes referred to four other cases of retinitis, complicating Bright's disease, which he had before reported to the Society, and in which the ophthalmoscopic appearances were so characteristic that the diagnosis of Bright's disease was at once declared. The subsequent examination of the urine and the course of the disease verified the diagnosis.

In each of these cases there were the typical appearances described in our recent works, and delineated in the best collections of ophthalmoscopic plates.

"These appearances consist of a swelling of the optic nerve disk, which is encircled by an opaque gray zone; this in turn is surrounded by a white belt, radiating lines of yellowish-white spots being observed external to the optic nerve, and minute patches of extravasated blood being scattered in different portions of the retina."

Morbid Changes of the Retina and Choroid in Tubercular Diathesis.

Dr. X. GALEZOWSKI, in the *Archives Generales*, having enumerated several general diseases which are apt to implicate the sense of sight, viz., syphilis, leucocythemia, and the hemorrhagic diathesis, asserts that there is another disease, involving the general organism, the influence of which on the eye has not yet been demonstrated, viz., the tubercular diathesis, though Noel Gueneau, Manz, and Cohnheim were aware of the existence of tubercles in the choroid.

A priori we must admit the possibility of tubercular development in the membranes of the eye, since, as Andral says, the tubercular matter may be produced as well in the cellular tissue of the lungs as in other parts of the body that contain this tissue. The ophthalmoscopic examinations which he has been able to make in a great number of persons affected with phthisis, have enabled the author to demonstrate certain changes of the retina and choroid, which are appreciable during life, and are the cause of certain functional troubles. He divides the alterations of the eye in tuberculosis into three forms: 1. Nutritive changes of the retina. 2. Inflammation of the optic nerve and its sheath, following tubercular meningitis. 3. Tubercular choroiditis.

1. Among the sympathetic disorders which take place in phthisical persons, that of the circulation is the most constant. The febrile movements which accompany nearly all the stages of this disease are the best proof of this. Associated with these disturbances of the circulation are: Increase of the volume of the heart with dilatation of the right ventricle, as has been observed by Andral and others; frequent œdema of the lower extremities, with or without fibrinous coagulum in the crural veins, and phlegmasia alba dolens. May not all these alterations be favored by the obstacle which the blood meets in its course towards the lungs, whose vascular system is disorganized and in a great measure destroyed?

If the circulation of the organs so remote as the lower extremities may be influenced by tubercular deposition in the lungs, it is natural to suppose that the eye, the circulation of which stands in such close connection with the heart and lungs, should take part in the disturbances of circulation; and, indeed, ophthalmoscopic examinations as well as the physiological symptoms prove the existence of these morbid relations.

CASE.—Mme. de Saint-Cyr, aged thirty years, had tubercular phthisis, was often seized with violent fits of coughing, and spat blood for a year. Toward the end of November, her vision became troubled; she commenced to see discs of different colors and circles in the form of a rainbow, whether her eyes were open or closed. Toward the middle of the month of December, she was seized, in the night, with a profuse hemorrhage, and the next day her vision was very much disturbed; she saw the objects in yellow and muddy colors. Light and white objects appeared to her light yellow, and black or dark-colored objects presented tints varied by the same yellow intermixture. This phenomenon lasted only twenty-four hours, and the following day the patient recovered the full chromatic power of the eye; but for four days there remained a thick fog before her eyes, which prevented her from reading or sewing. The right eye was completely restored, the left remained feeble. The examination with the ophthalmoscope revealed a marked engorgement of the vessels of the retina, which had caused all the symptoms described. More recently new and very interesting facts seem to confirm our supposition that the pulmonary circulation exerts a marked influence on the nutrition and consequently on the functions of the retina and the optic nerve.

CASE.—Mme. X——, thirty-eight years of age, is affected with phthisis for several years, and has cavities in her right lung. She is subject to frequent fits of coughing which at times last an hour; sparks and flashes of all colors disturb her sight; then a thick fog spreads before her eyes, which obliges her to suspend her work for one or more days. The ophthalmoscope reveals a considerable engorgement of the veins of the retina, particularly of the right eye. The retina is slightly veiled by an opaline and whitish tint in the neighborhood of the papilla, and along the course of some of the bloodvessels. It is worthy of observation, that the venous engorgement, which I have frequently met with in pulmonary consumption, appears most developed in the eye which corresponds with the most gravely affected lung.

Inflammation of the Optic Nerve and its Envelope, Symptomatic of Tubercular Meningitis.

Among the serous membranes which are exposed to the deposition of tubercles, the arachnoid membrane holds, according to Herard and Cornil, the third place in the order of frequency.

In this membrane we find only the miliary tubercles, which are developed principally around the vessels of the base of the brain, in the fissure of Sylvius, following the ramification of its arteries. Thence the affection extends itself over the region of the sella turcica and of the chiasm of the optic nerves, where it produces analogous disorders; the tubercular granulations begin to develop themselves, at first, in the vicinity of the optic nerves, and the sight becomes affected and particular morbid changes take place in the papilla of the nerve, recognizable through the ophthalmoscope.

The changes of the papilla associated with tubercular meningitis at the base of the brain are now well known, especially since we first attracted the attention of M. Bouchat to the subject. He has since then employed the ophthalmoscope as a means of diagnosis of tubercular meningitis. In a preceding article we have shown how far this claim is exaggerated, for it is only the meningitis at the base which can produce papillary changes recognizable through the ophthalmoscope, and this disorder, moreover, must be near the chiasm.

We distinguish two kinds of alterations of the optic nerve in tubercular meningitis: perineuritis, or inflammation of the sheath; and the neuritis proper, in which the substance of the optic nerve itself is inflamed. These two forms may exist together or sepa-

rately. The optic disc is swollen, its borders are very irregular, scalloped; the central vessels become tortuous and marked in the vicinity of the papilla; the capillaries in the centre of the papilla are also injected; these are the cerebral or meningeal vessels, the existence of which we have demonstrated.

Then the optic disc does not seem to undergo marked changes, and only its borders appear a little veiled by an exudation which extends along the vessels. In some places these vessels are torn. The existence of the affection in both eyes, and the sudden appearance of defects in vision, such as mydriasis, are so many characteristic signs of this disorder.

A very interesting case of this kind, which came under our notice at the Hôtel Dieu, with M. Peter, is reported in our work on the alterations of the optic nerve; it furnishes also an example of inflammation of the sheath.

CASE.—Mme. X——, 28 years old, formerly actress, was admitted into the ward of the Hôtel Dieu the 31st of March. She complained of violent supraorbital pains, increasing at night to such a degree, that she tore her face, and it was necessary to tie her hands. She had no fever; her pulse was slow and regular. No vomiting; digestion normal and bowels regular. Intelligence well preserved. The idea of meningitis could hardly occur to any one; taking, on the contrary, into consideration the nocturnal aggravations of pain and the rather adventurous life of the patient, Dr. Peter attributed these pains to a syphilitic origin, and prescribed a specific treatment. No amelioration followed this treatment; the pains were persistent in their intensity.

The patient complained also of double vision, which gave rise to the supposition of the existence of a cerebral disorder. With the help of the ophthalmoscope we discovered that the papillæ of both eyes were infiltrated at their periphery.

Their contours were very indistinct. In the right papilla the capillaries are abnormally injected; its centre has, however, retained its white tint. A small hemorrhagic spot is seen at the upper and outer part of the papilla; some white streaks run along the vessels. The left eyelid is slightly dropped. These symptoms made us certain in the diagnosis of meningitis at the base of the brain. The following days the state of the patient became more serious; another apoplectic spot appeared on the retina of the right eye, and the white exudation increased near the vessels; the trouble has affected the periphery.

There was no apoplexy in the left eye, but the papilla was œdematous. Patient died April 28. Autopsy: Brain healthy; no liquid in the ventricles. The meninges are inflamed and thickened on a level with the fissure of Sylvius, and around the chiasm and the bulb. In these parts the pia mater is infiltrated with a semi-fluid matter resembling pus. There are many granulations.

In the lungs there are miliary tubercles. We have given the chiasm of the optic nerves, with the diseased meninges, to M. Legros, who, with the aid of the microscope, has succeeded in convincing himself that the pia mater contains a considerable mass of tubercular granulations. The fibres of the optic nerve were not changed, but the sheath of this nerve was infiltrated, softened, and contained pus globules.

We have since observed several facts of this kind, as well as of neuritis. The question which presents itself to the pathologist is, What is the nature of the changes which we have exhibited in the papilla, and what is their significance? There are several ways of viewing the disease of the optic nerve.

1. The neuritis may depend on the compression of the brain and of the interruption of the circulation by thrombi in the vessels of the optic nerve, as Graefe thinks. This change does not seem to me frequent in tubercular meningitis.

2. When the inflammation of the substance of the optic nerve gradually involves the

inner sheath of the nerve and the interstitial tissue, the swelling of the interstitial tissue as well as the œdema which is the consequence, has the effect of strangling in a manner the optic nerve in its course toward the sclerotic: hence the varicose veins, the prominence and marked swelling of the pupil. The neuritis would, accordingly, be of a purely inflammatory nature, and might be remedied by curing the meningitis. To this form of morbid change we count those cases of optic neuritis which in some persons we were able to cure by an energetic antiphlogistic treatment.

3. The deposition of miliary tubercles after having involved the surface of the chiasm, may, in some cases, extend itself along the inner sheath of the optic nerve up to the point where it penetrates the sclerotic. Here the miliary granulations follow the internal partitions of the optic nerve, deposit themselves along the vessels, and reach the surface of the papilla. Beside the signs of neuritis and perineuritis, we discover rounded, whitish spots in the middle of the œdematous part of the papilla or its vicinity. We have also seen analogous spots in the macula, which have persisted notwithstanding a reduction of the inflammation of the nerve and a marked improvement of the sight. The exudations seen in the region of the macula are likely due to tubercular granulations of the retina, arrested in their development.

Tubercular Choroiditis.

The tubercular diathesis may affect the vascular membrane of the eye by producing morbid depositions analogous to those we find in other organs. These are small nodules, of a grayish-green or grayish-white color, situated in the middle layer of the choroid coat, and even on the walls of the vessels. The tubercles of the choroid present to the microscope the same structure and the same composition as those elsewhere found, as has been demonstrated by Manz of Freiburg. This author has published four cases of choroidal tuberculosis, which he has observed after the death of the patients, and the microscopic investigations have demonstrated to him the complete identity of this new formation with tubercle. A young girl died in consequence of general phthisis, and during life had amblyopia with excessive dilatation of the pupils; granulations, apparently tubercular, were found in the vascular coat of the eye, producing a prominence on the retina.

Manz has described the autopsy on a young girl, whose choroid coat presented three small whitish tumors, possessing the characteristics of tubercle. She had died in consequence of acute and general tuberculization of the lungs, the peritoneum, the spleen, the liver, and the kidneys. Cohnheim has just published seven cases of tubercle of the choroid.

Up to the present day the ophthalmoscopic revelations are not precise enough to diagnose this change during life. Our own investigations permit us to furnish some points more or less important. One of the most common phenomena which we have observed with such patients is the spontaneous appearance of lights and flashes which accompany a weakened power of vision.

The ophthalmoscope is sometimes very inconclusive: either the changes are so little marked, that it requires an attentive search over the whole choroid and a great magnifying power to find them, or, on the other hand, they are liable to be confounded with atrophy of the choroid. But the color of the granulations is more gray, their borders are more circumscribed, and they cover the choroid vessels, while those of the retina are not at all masked.

Here are some facts which have come under our observation and offer a decided interest, viewed as functional symptoms and as ophthalmoscopic signs:

CASE.—Young man of 19 years, was admitted April, 1865, into the Hôtel Dieu, with

far-advanced phthisis. He was pale and anæmic; the hectic fever, the cough and blood-spitting have forced him to leave his work, which required close application of the eyes. His sight had always been good. A year before, his vision began gradually to be impaired, so that at the time of our examination he could read only No. 6 of the typographic degrees. His sight at a distance is also weakened. The patient states that two or three times a day he will completely lose the sight of one or both eyes.

This blindness lasts only some minutes and disappears by leaving a weakness of vision and a degree of confusion. The last attack had lasted ten minutes and presented itself in the following manner:

First, the upper field of vision became misty, then the obscurity descended and caused complete blindness. At the end of a few minutes he began to distinguish objects, and gradually the peripheral field of vision cleared up. The patient sees flashes and sparks almost constantly, and flames of different colors; sometimes perfect rainbows, at others black flies, or cobwebs, which float or pass before one or the other eye. With the ophthalmoscope we have found, first, that the papilla was very much injected, and that the veins were varicose; second, that the whole choroid presented whitish spots disseminated over the bottom of the eye. These were neither atrophied spots, nor spots of the retina, but exudations on the choroid, which we do not hesitate to regard tubercular.

These facts acquire the more importance for being supported by other cases of the same nature, observed and described in Switzerland and Germany.

In the *Berliner Klinische Wochenschrift*, we find an interesting case of tubercles of the choroid, developed in a person with acute tubercular phthisis. We give here an abridged account of it: A patient in charge of Prof. Griesinger, at La Charité (Berlin), suffered with acute miliary tubercle. The ophthalmoscopic examination of Graefe and Leber, revealed the presence of tubercle in the choroid. The essential characteristics of these tubercles presented to the ophthalmoscope, are a regular and rounded form of the whitish spots or nodules, and the absence of accumulation of pigment in their neighborhood, so that these nodules are surrounded by parts healthy and normal in appearance. All the details of the size and the position of these spots have been pointed out with the aid of the ophthalmoscope, and verified a few days afterwards by the autopsy made by Leber.

To Cohnheim this class of tubercles of the choroid appears a constant sign of acute miliary tubercle, and after having observed eight cases, he believes that acute miliary tubercles cannot exist without tubercle of the choroid.

We have not come to the same conclusion in our research on the subject, and we believe that tubercles of the choroid may, at times, be met with in the acute form described by Cohnheim, as well as in the general chronic form of phthisis. We doubt not that future ophthalmoscopic investigations will show that tubercles of the choroid occur more frequently than we think, and that they may develop themselves in the various forms of the tubercular diathesis.

Here follows a short extract from the researches of Cohnheim, of Berlin, published in *Virchow's Archives*. The observation of seven cases, with anatomo-pathological examination, results in the discovery of miliary tubercles in nearly all the organs of the human body, especially in the heart, the pleura, the lungs, spleen, kidneys, thyroid gland, muscles, bones, and the choroid coat, appearing in the form of semi-transparent granulations. In some cases only, he found caseous masses in the lungs and ganglia; but, according to Cohnheim's opinion, they have nothing in common with choroidal tubercles, which he regards purely as products of acute tubercle. Most of these tubercles were situated beneath the epithelial layer, which was not changed; but, when the size of the nodules attained the size of 1.5 millimetres, they formed prominences beneath the retina, and the pigment

had disappeared from their surface. Sometimes the prominence of the tubercles beyond the level of the choroid exceeded one-third of a millimetre. The tubercles originate, according to the author, in cells similar to the lymphatic cells, which exist in the choroid, and he does not share the opinion either of Manz or of Busch, that they might arise from the adventitious membrane of the large vessels of the capillaries of the choroid. Neither age nor sex appears to have any influence on their development, since Cohnheim has observed them in subjects at the age of 6 months and of 59 years.

A Rare Form of Injury of the Eye.

Under the above title, Dr. M. SPITZER, in the *Wiener Med. Wochenschrift*, August 24th, 1867, relates a case in which a shot was lodged in the conjunctiva *without wounding the lid*. Two hours after the accident the right upper lid was found much swollen and injected; vision was not disturbed. Eight days afterward the swelling had entirely disappeared, but the conjunctiva of the bulb was considerably reddened. The patient alleged that he could feel something in the upper lid pressing upon the eye. The upper lid was now turned up against the border of the orbit, and the patient directed to look down, and the bulb of the eye fixed in this position. By this means a cystiform projection was discovered about a line and a half from the corneal border of the conjunctiva. In this an opening was found about the size of a pin's head, through which the shot could be seen. The opening was enlarged and the shot removed. The penetration of the little projectile into the conjunctiva can only be explained by supposing that the patient was looking toward the left, with eyes wide open, for only in this way could the shot penetrate without going through the lid or some other tissue. Another point of interest is, that although the shot was flattened when removed, it had not gone beyond the conjunctiva,—a fact as difficult to explain as the alteration in form which results when musket-balls pass through the soft parts only.

Cystocercus in the Interior of the Bulb of the Eye.

Prof. AULT, in the proceedings of the K. K. Gesellschaft der Aerzte, in the *Wiener Med. Wochenschrift*, July 10th, 1867, communicates a case of successful extraction of cystocercus from the interior of the bulb of the eye. The operation was performed on the 21st of June. On the 28th, vision had not been materially improved.

Prof. Becker, in a communication to the same society, proceedings of July 5th, notes the peculiar fact, that in Vienna the occurrence of cystocercus in the eye is very rare, while in the north of Germany it is more frequent,—Græfe having observed as many as thirty cases, and lately three more cases were present at his clinic. Prof. Becker believes this is due to the fact, that near Vienna only the *tænia mediocanellata* is to be found in the human subject, while in the north of Germany, where much raw flesh is eaten, the *tænia solium* is of common occurrence.

Removal of a Foreign Body from the Posterior Chamber of the Eye.

Dr. HAUGHTON gives the following case in the *Cincinnati Lancet and Observer*, Sept. 1867:

G. B——, aged sixteen, in good health, while using a steel hoe on some stone in the street, received an injury of the cornea at its upper and inner margin, resulting in a flap-

like wound. Upon examination I discovered a foreign body of a shining appearance lying in the posterior aqueous chamber, with one extremity in the pupil, and resting against the margin of the iris. The eye was sensitive, though not yet painful, as I saw it late in the evening, and soon after the accident. I closed the eye, with directions to call again in the morning, with a view to its further examination. The next morning, the eye was injected, and somewhat painful, with cloudiness of the pupil from exuded lymph. I told the boy's father that inflammation and probable destruction would occur if the body remained, and that an effort at removal was proper, notwithstanding the risk of compromising the eye, directly or indirectly, by an operation. On consultation with Drs. Fisher and Hadley, it was thought best to attempt extraction of the lens with the foreign body, and between flap extraction or linear extraction with iridectomy, I decided in favor of the former.

Operation.—The patient being thoroughly narcotized with chloroform, and the lids separated by the retractor, I made the superior flap of the cornea without any accident or prolapsus of the iris. The lids were then closed for a few moments, when I proceeded to the extraction of the foreign body with the lens, intending to bring away the lens in its capsule entire. But I found that the muscular contraction and pressure had ruptured the capsule, so that the lens and foreign body escaped at once, after which the eye was closed. The patient was kept quiet for a few days, and no reaction or pain followed. On opening the eye on the eleventh day, the pupil was circular and vision was retained, so that he could see my face and features. The eye was again closed, and the patient kept quiet in a darkened room. As yet no pain or swelling has taken place, and the vision is still improving.

As the results of foreign bodies in the eye are very often disastrous to vision and the integrity of the globe, I thought it best to perform the operation described, and so far it promises well.

Acute Inflammation of the Membranous Labyrinth, which has generally been considered as Meningitis.

By Dr. VOLTOLINI, of Breslau.

Dr. VOLTOLINI remarks in describing a form of disease of the ear, which he classifies as above, that the diagnosis is not yet confirmed by any post-mortem examinations. It occurs almost exclusively in children, at any period from earliest infancy up to puberty. It generally ends in absolute deafness, consequently, the children who are not able to speak at the time of being attacked by the disease are deaf and dumb. If they are not over the seventh or ninth year of age they become deaf and dumb.

The disease is so frequent, that the writer has seen seventeen cases from January to June, in 1867. It was evidently an affection of the labyrinth in these cases, because no disease of any other part of the ear causes absolute deafness. The external auditory canal may be closed at birth, the membrana tympani may be entirely wanting, as well as the malleus and incus, the base of the stapes may close the fenestra ovalis like a wall, and yet the child may hear. Absolute deafness only occurs when the auditory nerve in the labyrinth is destroyed. By absolute deafness, it is not meant that the patient hears nothing, but that he cannot understand any conversation or words. There is scarcely any deaf mute, who is deaf to all sounds.

Absolute deafness may also be caused by destruction of the nerve in the cerebrum, although as we shall see it is not probable that such was the fact in the cases now under

consideration. The question may be asked if this affection of the labyrinth be not a secondary disease, continued from the meninges of the brain? But this does not seem to be so.

The symptoms are the following: The children are generally attacked quite suddenly, without any assignable cause, at any time of year. Severe cerebral symptoms appear. As long as consciousness remains the children seize hold of the head. Consciousness is soon lost, as a rule, severe fever occurs and they are very restless and delirious, boring the head in the pillows. The other parts of the body are at times stiff, or slight symptoms of paralysis appear in the extremities, but Dr. Voltolini has never observed permanent paralysis. Occasionally severe and constant vomiting occurs, strabismus, or staring of the eyes. The disease generally comes on so suddenly that very healthy children, in twelve hours after chills and vomiting, lie, as the parents say, like dead persons.

In some cases the disease has an intermittent character, and is then considered as a form of intermittent disease.

When the patients recover, it is with a staggering gait and complete loss of hearing. The loss of hearing does not always occur at once, but in some cases gradually.

How are we justified in considering the affection as meningitis, or as cerebro-spinal meningitis, with a continuation upon the auditory apparatus, or rather with an exudation in the auditory nerve, as is generally accepted?

Inflammation of the middle ear occurring in children is often mistaken for meningitis, until the exit of pus through the membrana tympani shows patient and physician what the affection is. This disease may go on to the membranes of the brain; and so can the disease of which we are now speaking. This complicates the diagnosis; yet in the affection now under consideration, which is a true *otitis interna*, there is this staggering gait, which is a constant symptom of injury to the semicircular canals, as physiological experiments have shown. Czermak has recently shown that vomiting is a symptom of injury to the labyrinth. In temporary affections of the ear, *e. g.*, inspissated cerumen, a staggering in the walk, sometimes occurs. But the absence of all symptoms of paralysis, especially in the facial nerve, is decided evidence against the idea of meningitis with exudation in the auditory nerve. (The author then shows, by a description of the relations of auditory to facial nerve, that an exudation on one alone is scarcely conceivable.) But in the labyrinth there are no fibres of the facialis, and the destruction of the acoustic at this point has no influence upon the facialis. In this affection the external ear, and cavity of the tympanum, as shown by inspection and the use of the Eustachian catheter, are perfectly healthy. Andral believes that delirium in meningitis is always constant, and that an intermittent delirium always depends on sympathetic irritation of the brain. The intermissions in some of the seventeen cases here spoken of, seem to confirm this view.

In the literature, this disease has been described as cerebro-spinal meningitis by Moos, in his work on the ear; thirteen cases are reported by him, which are the same as here given.

Inflammation of the dura mater (*pachymeningitis*), is generally a result of traumatic lesions (Hasse), and is generally fatal. Inflammation of the arachnoid and pia mater is also generally fatal. Cerebro-spinal meningitis is fatal in from one-half to two-thirds of the cases. I have never observed the epidemic appearance of this latter disease in the vicinity of the patients whose cases I have been describing. Menière described such cases, and supposed that the material changes occurred in the semicircular canals. But this is incorrect; for exudation in the semicircular canals cannot excite absolute deafness. These canals are probably only acoustic apparatus. No nerves have been found in

the membranous canals, or in the ampullæ. If these were destroyed, the cochlea remains for the function of hearing.

As to treatment, the author has never seen any benefit from any, except in one where the nerve was stimulated by constant practice in speaking to the child through a tube.

The author thinks the labyrinth of children peculiarly sensitive, and liable to inflammatory processes, just as the larynx is in such subjects.—*Monatsschrift für Ohrenheilkunde*, Berlin, October, 1867.

Six Cases of Myringomykosis.

Under the above head, Dr. ROBERT WREDEN, of St. Petersburg, describes some cases of vegetable parasites occurring in the external auditory canal. Three cases have previously been reported of mushroom growths in the ear—in 1844, by Mayer; in 1851, by Pacini; and in 1865, by Schwartz. These were of the *aspergillus* species, as determined by botanists. The six cases observed by the author were also parasites of the *aspergillus glaucus* variety. The affection simulates inflammation of the external auditory canal, and the appearance somewhat resembles depositions of cholesterine. The microscope, however, exhibits no cholesterine, but on the contrary numerous long, mushroom tubes with roundish spores. The auditory canals were about half filled with white lardaceous mass. This was removed by forceps, after syringing had failed. The epithelium of the membrana tympani and canal was then found to be removed, the cutis was dark red and swollen, malleus and light spot on the membrana tympani were not visible. There was, of course, loss of hearing and tinnitus aurium dependent on the closure of the canal and pressure on the drum.

The author first used an alcoholic solution of tannin, gr. x ad f 3j, and then one of lead, ext. saturn., gtt. v ad f 3j, both of which proved efficacious in destroying the parasites. But strong alcoholic solutions cannot always be used, because they frequently increase the inflammation of the auditory passage. Then we may use weak alcoholic solutions of tannin followed by lead-water for three days, and after the parasitic membrane is destroyed the case may be treated as an ordinary one of inflammation of the meatus and membrana tympani. In case no alcoholic solution will be borne, an alkaline one may be used, e. g. soda carb. gr. v ad f 3j aq.—*Archiv für Ohrenheilkunde*, Band iii, Heft i, 1867.

Results of Treatment of Diseases of the Ear.

Dr. H. Schwartz, of Halle, reports a number of cases of diseases of the ear, in which the following results were obtained from treatment:

Cured,	72
Considerably improved,	46
Unimproved,	13
Result unknown,	35
Yet under treatment,	7
Died,	3
	<hr/> 176

Of these cases— 51 were of external ear.
119 " middle ear.
17 " internal ear.
6 no diagnosis.

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—*Archiv für Ohrenheilkunde*, l. c.

The Permeability of the Eustachian Tube.

Dr. AUGUST LUCÆ, in opposition to the previously accepted views on this subject, as first declared by Toynbee, and subsequently confirmed by Von Tröltsch and Politzer, believes that the Eustachian tube "is not only open during the act of swallowing, but also during simple respiration." The author admits that there are cases where, during quiet respiration, the aural manometer detects no opening of the tube, but these are cases when either respiration is feebly performed, or there is pharyngeal catarrh. These negative results do not justify the belief that the walls of the membrano-cartilaginous tube lie air-tightly upon each other, but may be simply explained by the fact, that the membrana tympani offers a relatively greater resistance to the weak pressure of the air, and that this resistance is still further increased by the manometer which has been introduced into the meatus auditorius externus.

Politzer has also given the same reason for the fact, that in a normal condition in the simple act of swallowing, no movement resulted on the membrana tympani, namely, that the negative variation on the pressure of air is much too slight to overcome the resistance of the membrana tympani. In order to answer the question as to whether the tube does open during simple respiration, some other method of investigation than that by means of Politzer's manometer must be undertaken. It is important, first of all, that the anatomy of the membrano-cartilaginous tube should be carefully studied. Transverse sections are made for this purpose, as done by Rüdinger, Henle, Von Tröltsch, and L. Mayer. According to Rüdinger, there is a space immediately beneath the "hook-shaped" cartilaginous section, which is always open, and is either filled with mucus or air, while in the lower portion, the broad mucous surfaces come in contact, and are only separated during the act of swallowing. This is done by the contraction of the tensor palati molliis, which is inserted on the lower hook-like portion, and by which the membranous wall of the tube is removed from the median cartilaginous layer.

Thus, according to Rüdinger, it is yet not determined that there may not be at other times than during the act of swallowing, a free communication between the cavity of the tympanum and the external air.

L. Mayer confirms this view, while Tröltsch, from examinations on animals and men, is not able to detect this free space, and believes that the mucous surfaces of the calibre of the tube are everywhere in contact.

The author made sections of the tube, after it has been completely separated from the base of the skull. The preparations had been previously hardened by alcohol. Sections were also made on frozen tubes. From his examinations, he believes, with Rüdinger and Mayer, that there is a free space in the faucial orifice. Without doubt, in a normal condition, the pharyngeal orifice of the tube is open.

The calibre is also free from this point on to one near the middle. From this to the isthmus, the lower portion resembles a fissure, without giving the impression of an air-tight closure.

There can only be a free communication between the cavity of the tympanum and the pharynx, by means of the upper free portion of the calibre of the tube, when it passes directly into the bony portion of the tube. Lucae has not found that this free space thus opens, but that this ends blindly in the cartilaginous portion. He thus cannot give this free portion the signification ascribed to it by Rüdinger and Mayer; but on the other hand, it is not admitted that an air-tight closure actually exists between the middle cartilaginous portion and the membranous wall.

It is very probable that the latter is drawn away from the former by the weight of the

tensor and levator palati muscles. The weight of the soft palate has also some influence in this respect.

Having thus shown, as is claimed by anatomical examinations, that there is generally no air-tight closure of the tube, the physiological reasons are set forth as follows: Since we swallow very little, or not at all, during the night, on awaking in the morning and swallowing there should be noticed a sudden variation in the pressure of the air in the cavity of the tympanum, because during sleep more or less resorption of the air in the cavity of the tympanum must have occurred, if there was no equalization except during the act of swallowing. Such a movement is, however, not observed at the first act of swallowing in the morning; *but it is when one or the other tube has become impermeable from pharyngeal catarrh.*

Furthermore, persons who die of hunger must suffer from *tinnitus aurium* and deafness of course. Even without food, saliva is swallowed. But in the want of all chewing motions these actions of *swallowing* must at least be greatly diminished. In a case of a girl who had swallowed sulphuric acid, and where a stricture of the pharynx resulted, for sixteen days no food was taken by the stomach, and nutriment was received entirely through the rectum. In the very exact and complete history of the case there is no mention of any *aural* symptoms; and the reporter of the case, O. Schultzen, assured me that there was no complaint, during the entire duration of the affection, of any sensations in the ear. The author then details five experiments made with an air-pump upon the tube and cavity of the tympanum, which go to sustain the view above given; that is, that the tube is an open canal to such an extent that it allows an exit outward on vibrations of the membrana tympani to the variations in the pressure of the air. When Von Trötsch says that, during the act of swallowing, a "ventilation of the ear" takes place through the action of the muscles of the tube, I would add still more, that such an act of ventilation takes place during respiration; and that, in the act of swallowing, we have a safety-valve, which exerts its power especially when, in the existence of pathological changes in the tube, the movements of respiration alone are not sufficient for keeping the canal open.

Treatment of Otitis Externa.

Dr. A. D. WILLIAMS, of Cincinnati (*Lancet and Observer*, August, 1867, p. 485), says:

The treatment, in acute cases, must be active and antiphlogistic. Leeches in front of tragus or in orifice of meatus are advisable. From two to five will be sufficient. Pretty active purgatives are to be given for a few times. Moderately low diet is to be enjoined, but no starving. Locally the main indication is for the application of moist heat. The ear should be filled up frequently with warm water, which should remain there till it begins to get cold. In addition, hot fomentations to the ear are to be advised. Patient should be kept still. To relieve the intense suffering, if the warm application does not do it, give opium internally. A solution of morphia (4 to 6 grains to the ounce), warmed, may be dropped into the ear frequently, instead of the warm water. In this way the inflammation may be cut short, or active suppuration hastened, which will always give the patient relief. Trötsch advises strongly against the use of poultices and blisters in such cases. Says they do *positive* harm. The only counter-irritation practised by him is made by the use of cataplasms. As a rule, however, the physician rarely gets these acute cases of otitis externa to treat, for they last so short a time and pass so quickly into the chronic form that patients very rarely have time to apply for medical aid in the acute stage.

Two Cases of Eclampsia from Otitis Interna.

Dr. JUL. BOEKE, of Pesth, considers that not unfrequently many of the cerebral symptoms so common in children, such as acute pain in the head, dizziness, vomiting, and even paralysis of the extremities and muscles of the face, are to be directly referred to disease of the ear. This, he says, is not surprising, when we consider the close proximity of the internal ear to the brain itself, and the many nerves which are in part distributed to the organ of hearing. Diseases of the mind may also result from the same cause. He has treated a case of this kind in which the aberration of the mind entirely disappeared after the disease (otitis interna) was cured. Again, when it is remembered that diseases of the ear accompany typhoid and scarlet fever, and not seldom tubercular disease as well as the period of dentition, maladies in which cerebral symptoms often occur, the great importance of carefully investigating the condition of the ear becomes at once apparent. Two cases are given of children, a brother and sister, five and six years old, both of whom were suffering from otitis interna when cerebral symptoms supervened in the form of convulsions. Idiopathic affection of the brain seemed to be fairly ruled out, as after the convulsions the children were as well as usual. The diagnosis, though somewhat obscure, is probably correct; the convulsions depending upon irritation of the brain induced by the inflammatory condition of the ear.

(c) DISEASES OF THE NOSE, MOUTH, AND THROAT.

Morbid Growth Beneath the Vocal Cords.

Dr. STOERK exhibited before the K. K. Gesellschaft der Aerzte (*Wiener Med. Wochenschrift*, June 15th, 1867), a patient having a rare affection of the larynx, namely, a morbid growth beneath the vocal cords. This case, the Doctor remarked, is to be regarded as an isolated one, as no other of the same kind is to be found in the literature of laryngeal growths. The disease had its origin in syphilitic ozæna occurring in a scrofulous individual. This gradually extended down the nares into the pharynx, from thence to the epiglottis, and finally invaded the region of the aryteno-epiglottic folds and vocal cords. The vocal cords are seen to be grown together at their anterior angle. Posteriorly there is only a small slit remaining open for respiration and phonation. By an operation a cure may possibly be effected. The first step should be to detach the growth from the anterior portion, after which the remaining portions can be divided. Without an operation the patient must perish, as the growth is gradually increasing. Dr. Stoerk exhibited the same case at the next meeting of the Society two weeks afterward. He had succeeded in separating the vocal cords anteriorly by an incision, after which the voice and respiration were much improved.

Foreign Bodies in the Air-passages—A New Method of Removal.

By JOHN McDOWELL, M.D., Demonstrator of Anatomy in the St. Louis Medical College.
(Humboldt Medical Archives, September, 1867, p. 22.)

With a view to obviate the necessity of resorting to opening the windpipe in the event of the intrusion of a foreign substance into its interior, Dr. McDOWELL proposes to overcome the chief obstacle to the ready escape of such bodies, by relaxing the vocal cords, and widening the chink of the glottis. This mode of procedure is somewhat as follows: The body being inverted, and the head thrown back, in order to increase the anterior con-

velocity of the neck, and thereby form a support for the cricoid cartilage, the patient is directed to take a deep inspiration. The projecting angle of the thyroid cartilage is then firmly pressed backward, by which simple manœuvre the space through which the body has to pass is widened, and, at the same time, the chest is suddenly and forcibly compressed by means of a broad bandage.

This plan was successful in two cases, the only ones in which its originator has had an opportunity to put it into practice. Both patients were little girls. In one a swan-shot, and in the other a grain of popcorn, were thus happily gotten rid of.

Extraction of a Grain of Corn from the Trachea of a Boy.

By Dr. J. T. DAVIS, of Laconia Indiana (Cincinnati Lancet and Observer, October, 1867, p. 590).

Dr. DAVIS relates a successful case of tracheotomy for the removal of a grain of corn from the trachea. The patient was a boy, aged 7 years. Emetics, and inversion, with succussion of the body, having failed to afford relief, the trachea was opened on the third day, and the foreign body extracted without difficulty. Contrary to the usual practice, the incision was closed with sutures of iron wire. Notwithstanding an attack of pneumonia, the cure was complete at the expiration of one month.

Two Cases of Tracheotomy for Croup caused by Diphtheria.

By WILLIAM H. SHERWOOD, M.D., of Unionville, Ohio (New York Medical Journal, November, 1867, p. 111).

Dr. SHERWOOD reports two cases of tracheotomy for croup occurring in boys aged eight and twelve years. The former recovered, and the latter died in thirty-six hours, the case not being one favorable for an operation.

A Case of Polypus of the Larynx; Tracheotomy to prevent impending Suffocation; Laryngo-tracheotomy; Recurrence of the Disease; Operation Repeated; Recovery.

By T. W. S. GOULEY, M.D., Professor of Clinical Surgery in the University of New York (New York Medical Journal, September, 1867, p. 473).

A child, born in February, 1859, at the age of five years suffered from severe paroxysms of dyspnoea, and the voice was reduced to a husky whisper, these symptoms appearing after treatment for what was supposed to be diphtheria. Nearly one year later, tracheotomy was performed for impending suffocation, and there was soon reason to suspect the existence of a morbid growth of the larynx. Ten weeks after the first operation, the tracheal incision was extended upward through the cricoid and thyroid cartilages and the base of the epiglottis, where a number of cauliflower excrescences were seen to fill the laryngeal cavity, and extend up above the rima glottidis, where they could be felt by the finger inserted through the mouth. All of the growths were carefully extirpated by means of a pair of small scissors. The principal tumor, measuring one inch in length by one-third of an inch in its greatest transverse diameter, was attached by a narrow pedicle to the right inferior vocal cord, and nearly the entire length of the left inferior vocal cord. It had also a broad attachment to the left ventricle, and half filled it. From these points it was suspended, the lower extremity being free and extending into the trachea. A fenestrated silver tube was introduced into the original tracheal incision, and permanently removed on the eighteenth day, when the child could speak in a whisper. The voice gradually improved, so that in a few weeks she could make herself distinctly heard and understood.

Nine months subsequently, laryngo-tracheotomy was repeated, and several tumors excised as before, the largest being about one-third of the size of that removed at the previous operation, and the volume of the entire crop not exceeding one-half of that of the first crop. The raw surfaces and mucous membranes of the larynx surrounding them were touched with chromic acid, and a tracheal tube introduced, and withdrawn in three months.

From the amount of violence inflicted upon the larynx, it was thought that there was but little hope of restoration of the voice, but, at the time of the report, twenty months after the last operation, the child was able to speak in a loud and very distinct whisper. A laryngoscopic examination showed the vocal cords to be irregular and somewhat contracted, but there was no morbid growth.

Diphtheria—Tracheotomy.

In his *Report on Meteorology, Medical Topography, and Epidemic Diseases of Illinois*, published in the *Transactions of the American Medical Association* for 1867, Dr. HAMILL quotes Dr. Prince, of Jacksonville, as having performed tracheotomy five times in this disease, without saving one of the patients. In three cases death was immediate; the other two lived four days after the operation. In the same report, Dr. Whitmire is quoted as having successfully performed tracheotomy in a little girl, six years of age, who apparently was within a few hours of dissolution. On the first, second, and third day after the operation, he injected the larynx, from the opening, with a solution of iodine. He prefers this substance to other topical applications on account of its softening and dissolving power over the exudation, and its peculiar action on the capillaries.

The Operation for the Cure of Double Hare-Lip by a new and Improved Method.

By A. HAMMER, M.D. (*Humboldt Med. Archives*, Nov. 1867, p. 141).

After pointing out the causes of failure in operations for double hare-lip, with fissure of the palate, Dr. HAMMER describes a new operation, by which nearly all the difficulties with which the surgeon has to contend can be overcome, and which he has resorted to successfully in five instances of double hare-lip and double fissure of the palate. The operation consists of two steps, and is thus described:

First, to bring the maldirected intermaxillary bones into proper position and to make them fit exactly the opening left in the middle of the alveolar arch. This I accomplish by excising a triangular piece of the septum of the nose, of such an angle as to correspond to the angle made by the projecting intermaxillary bones with the arch. After it has gently been moved downward and backward, the surgeon can judge how much or how little is to be cut off on one side or both, that the gap may be exactly closed. I give preference to this method of changing direction over all others.

Second: To separate, as may be required, the middle lobe from the intermaxillary bones, then to freshen its edges as well as the margins of the lateral parts of the lip, resorting if necessary to auxiliary incisions in various directions according to the peculiarities of the shortening in the soft parts, accompanied by free and extensive incisions over the underlying bone so as to allow of great mobility of the lip. This being done, and the hemorrhage arrested, I apply a sustaining suture, which is in fact a quill-wire suture, at a proper distance from the edges to be united. Two pieces of common, smooth lead-pencil, from one and a half inch to one and three-fourths of an inch in length, and a strong needle

armed with a double wire of a size larger than is ordinarily employed in the usual wire suture, are all that will be required. The needle is passed through the entire thickness of the upper lip on a transverse line, striking the point of union between the septum and intermaxillary bones. The needle is made to transfix the integument from without inward on one side, at a point half an inch posterior or outward from the nostril, and through a corresponding point, but from within outward on the opposite side, and now the two pieces of pencil, one on either side of the face externally, are fastened by the double wire. Another similar suture is applied in the same manner and attached to the same pieces of pencil, about half an inch below the first, more near or remote according to the length of the intermaxillary bones, over which, that is to say in front of which, both wires must pass. By this means we accomplish a complete relaxation of the soft parts. All tension of the muscles being overcome, the corresponding portions of the cut edges can now be readily approximated, to do which I employ the common wire suture,—the wire being very small,—finding it less irritating than silk. Thus the operation is completed, no dressing being required except the occasional application of a little glycerine by means of a camel's-hair pencil, upon the united wounds. The wire sutures should be removed at the end of three days, union by first intention having then taken place, while the sustaining suture may be allowed to remain to the sixth, seventh, eighth, or ninth day. The wires of the latter in course of time cut somewhat the soft parts, producing four small, transverse, slightly suppurating wounds, which, however, heal without leaving any marked scar behind.

(d) GENITAL AND URINARY ORGANS.

Statistics of Ninety Cases of Operations for Urinary Calculus.

By PAUL F. EVE, M.D., Professor of Surgery, University of Nashville (Nashville Journal of Medicine and Surgery, July, 1867, p. 18).

In this contribution Professor EVE tabulates ninety cases of urinary calculus relieved by operation during the past twenty-five years, reporting the date, age, sex, race, mode of operating, number of stones extracted, and the result.

A summary of these cases indicates that seventy-eight were cut by the bilateral method, of which eight were fatal; in three the lateral operation was practised, two terminating in death; three were subjected to lithotripsy; in two vaginal section was performed; in one the operation was median; in two the operation was high, with one recovery; and in one the calculus was removed by urethral dilatation.

Eighty-six of the patients were males, of whom nine were of the African race, and four were females, one of whom was black. Fifty-five were under fourteen years of age; twenty-eight were adults; and seven were sixty and upward.

The general mortality was 12.33 per cent., or 1 in 82.11; in the aged 3 in 7; under twenty, 3 in 55.

The number of calculi removed was two hundred and twenty-five. From one white male, fifty years of age, not less than one hundred and seventeen were extracted, and the recovery was speedy.

It is well known that Professor Eve is a decided advocate of the bilateral section, being one of the few surgeons in this country who prefers that method. The results certainly speak well for the operation at his hands, the mortality having been only 10.25 per cent. Of the manner of making his incisions he uses the following language: "Experience has taught me to make a free section through the integuments covering the perineum, whether crescentic in front of the anus or in the shape of an inverted V, then by turn-

ing the edge of the knife upward, penetrating well into the groove of the staff just below or beyond the bulb of the urethra, upon which the lithotome is conducted into the bladder. The extent of the opening into this organ is limited to the size of the finger. If the patient is not old, and has no enlargement of the prostate, by careful, steady, persevering traction, the stone of any ordinary dimension can be extracted by forceps with safety; and if not, then it can be broken up, and every particle removed. The principle acted upon is, under all circumstances, to sacrifice the specimen, rather than endanger life."

On Lithotomy and Lithotrity in the Punjaub and Northwest Provinces.

By H. M. GREENHOW, Surgeon Bengal Army (The India Annals of Medical Science, No. XXII, July, 1867, p. 1-60).

In the northern parts of India urinary calculus is proverbially common; and lithotomy is so popular with the natives that it will be preferred for some years to come, at all events to the operation of crushing. Dr. GREENHOW has been at some pains to collect the statistics of operations for stone in the bladder as they occurred in the Punjaub and northwestern provinces, and embodies in his paper the experience of twenty civil and other surgeons, many of whom have practised lithotomy as often and as successfully as the great hospital surgeons of Europe.

As regards the mode of operation, lateral lithotomy is generally preferred, one-third of the twenty surgeons above mentioned having performed the median operation. The only instruments employed are a common scalpel or bistoury, a staff with a central or lateral groove, a pair of forceps, and occasionally a scoop. Of the twenty surgeons, it appears that fifteen prefer dilatation or laceration to free division of the prostate, five being advocates of the latter mode of procedure. Four of the surgeons prefer to introduce a tube or female catheter after the operation; while one inserts a piece of oiled lint into the wound for a few hours, and one employs cotton coated with glycerine. The remainder of the operators leave the wound alone, and one applies from eight to twenty-four leeches about four hours after the operation. In all of the 1851 cases comprised in the paper, chloroform was administered, and only three suffered at all from it, death resulting in one.

Lithotrity has been very little practised, and it seems improbable that it will ever supplant lithotomy.

Excluding the doubtful and imperfect cases, 1718 operations of lithotomy were performed, of which 259, or 1 in 6.63, or 15 per cent., proved fatal. The principal causes of death were exhaustion after operation, peritonitis, asthenia, diarrhoea and low fever, and pelvic cellulitis. In all of the cases here noted the patients were males; but, in addition, 90 operations on females are reported, of whom 79 were cured, 9 died, and the results of 2 are uncertain. The mortality of the latter was, therefore, 10 per cent.

As to caste, as far as reported, there were 1160 Mussulmans to 551 Hindoos; but Mr. Greenhow is not satisfied that one race is really more liable to calculous affections than the other.

The youngest case was that of a child fifteen months old, and two patients were one hundred and ten years of age. It appears that up to 40 years the operation is very successful, and that below 10 it is markedly so; while above 40, the death-rate steadily increases.

The size of the stone seemed to exert a marked influence on the result of the operation. Thus, when the weight was under one ounce, there was only one death in every seventeen

operations; whereas, as the weight increased, the mortality increased in proportion. It would also appear that large calculi are more common in India than in England, although the largest weighed only eleven ounces, and the patient died of diffuse pelvic cellulitis on the sixth day.

The nature of the operations adopted has already been described. Out of a recorded total of 1088 cases, there were 1064 lateral, 18 median, 1 supra-pubic, and 5 of Dr. Murray's operation, which latter is a modification of the lateral, or, more properly, a medio-lateral procedure.

High Operation of Lithotomy for a Ball Shot into the Bladder.

By J. D. WALLIS, M.D., of Franklin, Tennessee (Nashville Journal of Medicine and Surgery, June, 1867, p. 502).

A man was shot at the battle of Corinth, the projectile having entered above the pubes and a little to the right of the median line. About four weeks later, urine began to escape by the opening, and as the patient's health was rapidly failing, Dr. Felton, some three weeks after the first appearance of urine at the wound, operated by the high method, and removed an ordinary musket-ball from the bladder. Death ensued in twenty-four hours, but the cause is not mentioned.

Re-establishment of the Urethra after its Division by Gunshot.

By Professor PAUL F. EVE, M.D., of Nashville, Tennessee (Nashville Journal of Medicine and Surgery, October, 1867, p. 161).

A private of the Fifth Tennessee Cavalry was shot on the 24th of February, 1865, the ball (carbine?) entering the right gluteal region, traversing the intervening structures, and making its exit through the left os pubis at the groin. No urine passed by the natural channel after the reception of the wound, but it was all voided by the opening in the groin, which rapidly became converted into a fistulous sinus, and discharged some spiculæ of bone. Upward of two years later, the man came under the charge of Professor Eve, who could effect nothing in the way of restoring the urethra by the use of sounds, the urethrotome, and dilators, the difficulty lying principally at the membranous portion of the tube. Perineal urethrotomy was then resorted to, and the obstructed urethra dissected through for about two weeks, after which a No. 12 catheter was retained in the bladder. A few days after the operation both sinuses made by the ball began to suppurate, but soon closed. At the expiration of seventeen days he left for his home, entirely relieved, passing all his urine per urethrum.

Remarks on the Pathology and Treatment of Urethral Calculi, and of Foreign Bodies in the Urethra.

By CHARLES E. LEE, M.D., New York (New York Medical Journal, Nov. 1867, p. 97).

In this interesting paper, Dr. LEE narrates a case of removal, by perineal section, of a calculus retained about one inch in front of the bulb of the urethra, and adds some remarks upon the pathology, symptoms, and treatment of urethral calculi, and of foreign bodies impacted in the canal.

A little boy, four years of age, had suffered from occasional attacks of dysuria for four

years, and for the past two months the bladder was constantly distended, the urine passed by driblets and with difficulty, and his general health was much impaired. Dr. Dougherty, who had charge of the case, detected a stone in the situation above mentioned, but was unable to push it back into the perineum, or to remove it through the meatus. A large grooved director having been introduced, an incision was made upon it well behind the edge of the scrotum, and, after enlarging this anteriorly for about half an inch, the calculus was extracted by means of a long, slender pair of Weiss's forceps. The child recovered well from the operation, but as calculous symptoms persisted, Dr. Dougherty made a more thorough examination at the end of three weeks, and detecting the presence of stone, removed three calculi by the lateral operation.

Dr. Lee refers to a somewhat similar case, occurring recently in the practice of Dr. Van Buren, in which a uric acid calculus, of six grains weight, was found impacted behind the triangular ligament. It was pushed back into the bladder, whence it was removed by lithotomy. The patient was a child of about the same age as in the former case.

The author also quotes the cases of Professor Grube, of the University of Crakow, as recorded in the *Berlin Klin. Wochenschrift*, 1857, No. 5. These comprise fifty-eight examples of urethral calculus, occurring in his private and hospital practice, nearly all of which were seated in the navicular fossa. Of these, forty-nine were extracted with different kinds of forceps, five by perineal section, two by lateral lithotomy, and two by lateral incision of the spongy portion of the urethra. Both of the cases of lateral lithotomy died of uræmia and diffused inflammation of the kidney. In one very remarkable instance, the stone weighed five ounces and seven drachms, and measured one inch and three-quarters in diameter, seven inches and three-quarters along its outer semicircular border, and four inches and a half along its lesser under border.

The remainder of the paper contains a useful summary of all that is known of the pathology and treatment of impacted urethral calculi, and of foreign bodies introduced from without, but no new information is advanced.

A Case of Elephantiasis of the Scrotum and Prepuce successfully operated on.

By J. S. THEBAUD, M.D., Surgeon to the Hospital of the Colored Home, New York.
(Pamphlet reprint, pp. 19. New York, 1867.)

Previous to the operation of Dr. Thebaud, the only cases of removal of scrotal elephantiasis of any magnitude in the United States were those of Dr. Pictou, of New Orleans, and Dr. Bozeman, now of New York. The subjects of both operations were negroes, and the tumors weighed respectively fifty-three and forty pounds.

The subject of the present report was a colored man of strumous habit, aged 22, and a native of Georgia, who, eight years previous to the operation, fell astride a rail-fence, thereby contusing the scrotum. Three months after the subsidence of the pain and swelling, the parts began to ache, and the anterior lower portion of the scrotum began to thicken. From this point the tumefaction gradually extended up the bag, involved the prepuce, and then rapidly increased, until the tumor reached to within five inches of the floor, when the man was erect. The mass measured from its summit to its base twenty-eight inches, and the circumference at the widest portion was forty-eight inches. The weight of the growth was sixty-three and a half pounds.

By an ingenious operation, the different steps of which are illustrated by wood-cuts, Dr. Thebaud succeeded in saving and forming a covering for the right testicle and penis. Following the recommendation of the Calcutta surgeons, for several hours previous to its

removal the tumor was elevated, in order to drain it of its blood; but the procedure caused such excessive œdema at its apex as to materially complicate the operation, the complication thereby more than counterbalancing the amount of blood saved. The operation was borne well, and nearly one hundred ligatures were required. In somewhat less than two months and a half, the wounds had entirely healed, with the exception of a small spot at the junction of the scrotum with the under surface of the penis. The parts had yielded so much to light strapping that they were but a trifle larger than natural, and the man walked without much difficulty.

[In congratulating Dr. Thebaud on the successful issue of his case, which is unique in this country, we must take exception to one portion of his operation. We refer to the covering of the penis and testicle with the morbid tissues. An inspection of the wood-cut which shows the appearances of the genitals ten months subsequently to the operation, demonstrates conclusively that the parts are unnaturally large, and that the disease is, therefore, liable to return. Dr. Fayser, Professor of Surgery in the Calcutta Medical College, who has had great experience in managing this affection, calls particular attention to this point. He not only removes the entire scrotum, but also the prepuce, since the latter, even if healthy, is liable to become thickened from œdema and infiltration, delaying recovery, and causing patient and dresser much trouble. He says (*Clinical Surgery in India*, p. 314 et seq., London: Churchill, 1866): "The bleeding having been controlled, the testes, with their elongated cords often extended to the length of a foot or even eighteen inches, and much thickened, are to be raised and applied to the surface of the wound; the penis is to be enveloped in a fold of oiled lint, and thus kept apart from the testes, which are also covered and supported in position by oiled cloths. . . It is very seldom that any sound integument can be preserved from the perineum, to form flaps to inclose the testes after removal of the tumor; but this is of little consequence, as granulation rapidly closes in the wound, and the skin is drawn over the exposed parts by the contraction, which goes on very rapidly, and so effectually, that, when perfectly healed, the cicatrix is reduced almost to a line where the raphé formerly existed. The penis, in those cases where no integument could be left for its covering, is amply protected by cicatrix tissue, which, though it causes a good deal of retraction of the organ, rapidly perfects itself, becoming detached, like other cicatrices elsewhere, and so pliant as to adapt itself readily to the varying conditions of the subjacent tissue."]

Notes of a Case of Very Large Elephantiasis Scroti.

By JAMES IRVING, M.D., Civil Surgeon of Allahabad.
(The Indian Annals of Medical Science, No. XXII, July, 1867, p. 405.)

In a recent number of the *Indian Annals of Medical Science*, Dr. IRVING recorded a case of scrotal elephantiasis, in which a tumor weighing 136 pounds was successfully removed, the testes being cut away, and the penis saved. A still more recent case is now reported, in which the extirpated mass weighed 152 pounds, and it is probable that at least five pounds of blood and semen had drained away from it before it was put upon the scales.

The patient was upward of 60 years of age, and the following were the dimensions of the tumor: Antero-posterior, commencing at the apex in front, and terminating at an opposite point behind, 5 feet 10 inches; lateral, passing from apex on one side to the opposite, 5 feet 7 inches; circumference at the middle, 5 feet; length, 2 feet 6 inches; breadth, 2 feet 8 inches. The operation was attempted to be performed in the usual way, by endeavoring to save both testes and penis; but the hemorrhage was so alarming, and

the man so much exhausted, that it had to be concluded as speedily as possible. The partially dissected out penis was unfortunately cut off in sweeping around the tumor with a long catling. The bleeding vessels were speedily secured, and death upon the table was imminent. Reaction, however, fully occurred, but death followed on the sixteenth day, apparently from colliquative diarrhœa.

Two Successful Cases of Ovariectomy.

By Dr. SKLIFFOSOFFSY, of Odessa (Langenbeck's Archiv, Band ix, Heft i, 1867, p. 234).

Dr. SKLIFFOSOFFSY, Surgeon to the City Hospital of Odessa, relates two successful instances of extirpation of unilocular ovarian cysts, occurring in subjects, one a widow, the other a maid, aged respectively 28 and 30 years. In both the operation was performed by the short incision: the pedicle, which was included in a stout silk thread, was brought out at and fixed in the lower angle of the wound, the edges of which were approximated by three metallic sutures carried through the entire thickness of the abdominal walls, and from seven to nine points of the twisted suture, which penetrated the integuments alone. The dressings consisted of dry charpie and a compress of soft flannel, secured by a broad roller. Over these was placed a bladder filled with ice. In the first case the solid and fluid contents of the tumor weighed thirty pounds. The woman was permitted to leave her bed at the expiration of a fortnight, and the entire wound had closed on the thirty-third day. In the second case the cyst, with its contents, weighed fifty-four pounds, but the date of recovery is not recorded.

In connection with this communication it is interesting to note that the operation of ovariectomy was first practised in Russia, in 1862, by Professor Krassoffsky, of St. Petersburg, and the patient made a good recovery. In the summer of 1866 the same surgeon repeated the procedure seven times. Of these cases, five were cured, one died, and one was doing well at the date of the report, fourteen days after the operation. In all the pedicle was separated by the actual cautery, as the preferable means of dealing with it.

Observations on Ovariectomy.

By Dr. DANZEL, of Hamburg (Ibid., p. 244).

Dr. DANZEL, after making some remarks on the difficulties in the diagnosis and prognosis of ovarian tumors, narrates three cases of operation for the removal of these growths. In one the procedure was a failure, its completion having been rendered impracticable on account of the adhesion of the cyst with the colon, omentum, and bladder. The sac was injected with iodine, and death ensued from peritonitis after the lapse of several weeks. In the remaining cases the operation was finished, the short incision having been practised. The trocar of Mr. Spencer Wells was employed to evacuate the contents of the cysts, and their pedicles were secured and fixed by the ordinary clamp. One of the patients, a married woman, aged 50 years, died after five days, but a post-mortem examination could not be obtained. The subject of the other case was a virgin, 22 years of age, who was operated upon on the 12th of June, 1866. The clamp separated on the eleventh day, and she left the hospital cured on the 24th of July.

Successful Removal of an Ovarian Tumor.

By Dr. BURNHAM (Chicago Medical Journal, Sept., 1867, p. 434).

The patient of Dr. BURNHAM was a married woman, aged 20 years. An incision of the usual length having been made, the tumor was withdrawn, the pedicle ligated, and

then divided. The wound was closed with silver sutures, and a compress and roller applied. The recovery progressed without a single untoward symptom, and was perfect in four weeks.

Ovariectomy.

By Dr. S. D. JACKSON, of Chicago (Ibid., June, p. 241).

Dr. JACKSON removed a tumor, the solid and fluid contents of which weighed sixty-six pounds, from a married woman, 28 years of age, on the 28th of March, 1866. The short incision was practised, the trocar of Mr. Wells employed, and a clamp applied to the pedicle. The wound was approximated by seven stitches, four of which included the peritoneum, and covered with a strip of oiled linen. The entire abdomen was painted over with collodion, and covered with several layers of wadding, confined by a roller. At the expiration of the fourth week the patient was well.

Operation for Varicocele Simplified and Improved.

Dr. A. HAMMER, of St. Louis, in the *Humboldt Medical Archives*, Oct., 1867, advises the following operative procedure :

The vas deferens should be carefully isolated from the other structures making up the spermatic cord, and a wire-armed needle passed through the interspace thus made between the deferens and remaining cord-tissues, from before backward, about an inch above the head of the epididymis, and thus the two walls of the scrotum will be transfixed by the wire. The pressure may now be removed from the vas deferens, and the scrotum drawn outwardly so that the two stitch-wounds will be outside of the external margin of the entire cord, which wounds will be brought in close proximity, in fact cover each other, if the inner surfaces of the scrotum are pressed together. The needle, still armed, should now be repassed, from behind forward, and through the same wounds already made, in such manner as to subcutaneously include in the wire loop thus formed, the bundle of varicose veins. The ends of the wire now appearing from the same opening at the front of the scrotum, are to be seized by a pair of strong forceps and twisted with just sufficient force as may be necessary to close the lumen of the inclosed varicose veins. At intervals of every three days, another twist may be given to the wire, and usually, at the lapse of a fortnight, the loop cuts its way through the venous tumor and is easily removed.

Within the last eight years he has frequently operated in the above-described manner, and with uniformly good success. Experiments with silver, iron, and copper wire, have caused him to give preference in favor of the latter, but, whichever may be used, care should be taken that it be well annealed, lest being brittle it break. Such an accident happened twice, the little wire loop breaking off from its neck and remaining within the scrotum, a circumstance unpleasant to the surgeon, but of no serious consequence.

In several cases, *two* wire loops were applied, half an inch distant from each other, that portion of the vessels between them becoming transformed into a hard fibrous cord. He, however, observed no peculiar advantage in this plan, as the single loop was never followed by a relapse of the affection, and thus Dr. H. now employs but a single ligature.

The inflammatory action was not marked, even in those cases which for experiment's sake were allowed to be up and about, the testicles meanwhile being supported by a suspensory.

The Male Mammary Gland and Gynecomasty.

Dr. WENZEL GRUBER, of St. Petersburg, has examined a very large number of male mammary glands, in both anatomical and physiological relations. His examinations include, under various headings, as the case may be, both living and dead. Omitting his statistics as to the seat of the nipple, its form, and the form, size, weight and development of the mamma, we shall refer to his observations as to mammary secretion in the male. He examined ninety individuals from 10 years old to old age, and in twenty-two or in about one-fourth of the whole number he could press out some liquid which was usually clear as water, sometimes turbid, and varying in quantity from a small drop to several large ones. In a middle-aged man the secretion on pressure spirted out to the distance of six inches. The glands in the dead subjects which yielded secretion, varied in weight from 3 grains to 29 (the mean weight of all the male mammæ examined being 12 to 13 grains). The specimens of maximum size and weight (in one individual 20 years old, 137 grains) gave no secretion on pressure.

Gynecomasty, or the existence of womanlike development, Dr. Gruber has also observed a number of times, and he gives a pictorial illustration of a prominent case in a man 78 years old. Collating the observations published by others with his own, the author comes to the following conclusions: 1. Gynecomasty with well-formed genital organs occurs mostly without secretion of milk in the hypertrophied gland. (Gruber himself dissected seven cases of either monolateral or bilateral gynecomastic development, in which the number of milk ducts varied from fifteen to twenty, some of considerable volume, in the 78 years' old man three-fourths of a line, all ending in blind terminations, without glandular vesicles, in no case secretion of milk.) Many reported cases of males having suckled children, are shown to be not authentic, but the case reported by Schmetzer, of Heilbronn, of a 22 years' old robust soldier (Württemberg Corr. vi, 33), is allowed. 2. Numerous cases of gynecomasty are mentioned, with imperfect or malformed genital organs, i. e., smallness of testicles and penis, hypospadias, epispadias, lateral hermaphroditism. 3. Pseudo-gynecomasty: Large deposition of adipose tissue in the region of the mammary gland in robust and fat men, sometimes gives the appearance of gynecomasty, without there existing any degeneration of the gland at all.

Case of Entire Absence of Anus, with Recto-vaginal Fistula.

The following details of a case, and its successful treatment, are reported by Dr. HOWARD PINKNEY, Surgeon to the Out-door Department, Bellevue Hospital, in the *Medical Record* for July 15th, 1867, p. 223:

Corinna P—, aged 8 months, was first seen by me 21st of November, 1866. The infant was exceedingly small, very thin, had a sallow, unhealthy appearance of the skin, and was very fretful. Mother states that the child has never had a free discharge from its bowels, and that, at the present time, it is only after severe straining efforts, in which the little sufferer turns almost black in the face, that a small thread-like portion of fecal matter is forced through the vagina. She also says that since the birth of the child she has never been able to keep its extremities warm.

On examination I found an entire absence of anything that resembled an anus. The skin between the ischiatic tuberosities, vagina, and coccyx, was distended and smooth, with the exception of a raised ridge or raphé extending from the posterior fourchette to the coccyx. On examining the vagina I found a small opening (sufficient only to admit

a large-sized probe) on the posterior wall of the vagina, and about a quarter of an inch from its orifice, communicating with the rectum, and through which fecal matter was forced during the straining efforts. Examining the abdomen, I found it very much swollen and distended.

As the child was rapidly failing, and as the mother and friends had given up all hopes of its recovery, I advised an immediate operation as the only means of relieving the little patient. The mother consented after a few days, and on November 28th, assisted by Dr. R. F. Weir, I operated as follows: The child being placed on the lap of an assistant, was brought under the influence of chloroform by Dr. Weir, and being then placed in the position for lithotomy, a probe was introduced through the opening and directed toward the perineum. I then made an incision from a point a few lines posterior to the fourchette to near the point of the coccyx in the median line, and carefully dissected inward in this line until I came to the rectum, which was readily distinguished, as it was greatly distended by impacted fecal matter. The incision posteriorly extended a little more than an inch in depth; anteriorly four or five lines. The probe that was passed through the opening was forced down, and could be readily felt at the bottom of the sac. Opening the gut upon the point of the probe, I introduced a director, bent nearly at right angles, and then by means of a probe-pointed bistoury enlarged the opening to the size of the external wound. As soon as the gut was exposed straining efforts commenced, which continued after it was opened; but no fecal matter came away, although it could be readily seen impacted there in large quantity. By means of the handle of a spoon and of a scalpel, I was enabled to dig out a large quantity of hardened fæces, when a large quantity of consistent fæces came away, taking the form of the external opening, and being at least an inch in diameter. After carefully washing out the bowels with an injection of warm water, I brought down the edges of the divided intestine, and united them to the margin of the external wound by means of silver sutures; then placing a pledget of oiled lint in the opening, to keep the surfaces from uniting, the operation was completed.

The next day, on visiting my little patient, I found her looking much brighter than I had ever seen her before. She had slept well, and had had one or two free movements from the bowels. Examining the wound, I found the sutures through the intestine torn out, and the intestine retracted within the wound. I made no attempt to draw it down, but merely removed the sutures, and distended the opening (which showed a tendency to unite) by means of my finger and the blades of a dressing forceps, after which I renewed the pledget of lint. This treatment of dilatation by means of the finger and forceps, with the occasional use of a rectal bougie, was continued almost daily up to December 14th, when the wound was entirely healed, and was lined by a smooth and shining membrane. This opening was sufficiently large to admit a number 11 rectal bougie. There seemed also to be a tolerably well-formed sphincter developed. No attempt was made to close the recto-vaginal opening, hoping it might close itself, or, in case it did not, intending to operate at some future time.

Contributions to Plastic Surgery,

PARTICULARLY AS IT RELATES TO DEFECTS OF THE VAGINA AND RECTUM. WITH A REPORT OF THE AUTHOR'S PLASTIC OPERATIONS FROM EASTER, 1861, TO EASTER, 1866.

Professor G. SIMON, of Rostock, publishes under the preceding title, a series of exhaustive papers running through Nos. 92, 93, 94, 95, 96 of the *Vierteljahrsschrift für die Praktische Heilkunde*. The whole subject is treated with great minuteness and originality. The results of the author's operations, though surprising to those who may still adhere to the rigid rules first laid down, when vesico-vaginal fistula became a curable

disease, must remain as the most striking proof of the general correctness of his theory and method of operating. We compress that portion relating especially to *vesico-vaginal fistula* as being perhaps of the greatest general interest.

In defining the *chief conditions of cure*, the author remarks that most operators (foreigners more than Germans), have erred in laying too much weight upon minor points, while at the same time, they have neglected those upon which success really depends. He contends that the conditions of cure in vesico-vaginal fistulæ are precisely the same as those of any other plastic operation, in which the closure of the defect is attained by the stretching of its borders; *i. e.*, upon *proper freshening of the wound, and corresponding precision in uniting its edges*. He believes that neither the presumed toxic effect of the urine, hitherto considered as the greatest obstacle to cure, nor the movements attending the filling and emptying of the bladder, hinder cicatrization when the above indications are fulfilled. Other points upon which great stress has been laid by later writers, such as the *very wide freshening* of the mucous membrane, and the employment of a silver wire as a suture, are also considered of inferior value. He considers that the cause of the unfavorable results of earlier operators arose, without doubt, from their insufficient knowledge of the conditions of cure already mentioned, and the great difficulty of access to the field of operation, the necessary exactitude in freshening the wound, and the approximation of the sutures being unattainable for want of proper means to expose the parts forming the fistula. Since more attention has been paid to the proper freshening of the wound, and the exact coaptation of the parts, aided by proper instruments for exposure, the cure has been rendered almost a matter of certainty, even when the operation is performed by persons comparatively unskilled in this department of surgery. "The merit of the operation of Sims does not," he says, "consist so much, as is generally believed and advanced by Sims himself, upon the employment of silver wire as a suture, but rather in the invention of a proper speculum, by means of which sufficient exposure of the parts can be obtained for almost all operations."

The author then gives the steps of his own method of operating. He considers—

1st. *The Position*, which is the same as that for stone, the buttocks being raised a little higher. The author has tried every other position, and gives this the preference over all others for operations upon the anterior wall of the vagina.

2d. *The Exposure of the Fistula*.—When the uterus is easily movable by drawing it down to the entrance of the vagina. When only slightly movable by means of speculums (Sims's), vaginal holders, small hooks with long handles, etc.

3d. *The Freshening of the Wound*.—He gives the preference to what he calls the *deep* or rather *steep oblique* (steilschräg) funnel-shaped method of freshening, for all fistulas in the region of the bladder and urethra, consequently, in the greater number of cases. In fistulas involving the uterus, the freshening can be *more parallel* and *wider*, and *superficial* and *very wide* for closure of the vagina, by uniting the anterior and posterior walls, or kolkpleisis. When the uterus is not implicated, he makes the border of the wound only three-fourths or one centimetre wide. Other operators, both Americans and Germans, go considerably beyond this, to two or two and a half centimetres, at the expense of the vaginal wall, and although they have obtained good results, he believes their method to be inferior to his own. The *wide freshening* does not, according to his experience, heal in its entire extent; the under portion separates again, leaving only the upper part united. In *small fistulas*, the wide freshening is not attended with bad results, because there being an abundance of vaginal membrane to close the defect, there is no

great amount of tension upon the sutures, but in large openings, where but a small portion of the vaginal membrane remains, the walls of the wound are forcibly drawn together, and the danger of wide freshening here becomes apparent; it involves a larger amount of tissue, and renders the cutting through of the sutures more imminent, on account of the greater tension.

4th. *Uniting the Wound.*—The author uses a variety of methods, from the simple button suture, to the compound looped and double suture, according to the amount of tension to be overcome. As a rule, his suture consists of a double thread of the finest Chinese silk. The sutures are placed very close together, ranging from one-fourth to one-half centimetres from each other. In applying the sutures, the author does not think it necessary to take extra pains to avoid including the mucous membrane of the bladder. In large fistulas, he intentionally includes the whole thickness of the vesical mucous membrane. He believes that the irritation ascribed to the inclusion of the mucous membrane of the bladder, is more due to the subsequent introduction of the catheter, than the presence of the sutures. Whether the mucous membrane of the bladder is to be included or not, depends upon how much it will contribute to securing the main point, *i. e.* the most exact coaptation of the edges of the wound.

5th. *After-treatment.*—The after-treatment of the author is almost entirely negative. As little interference with the patient as possible. As a rule, no catheter is introduced. If the urine cannot be passed voluntarily, the catheter is employed according to necessity. In the first twenty-four hours, an *occasional* introduction is necessary, as the patient cannot pass the urine voluntarily. Soon, however, the patient gains control over the bladder; the catheter is then entirely discontinued.

These are the chief points of the general outline of the author's method. The details are, of course, varied according to the size, situation, and complications of the fistulous opening.

The two principal methods of procedure depend upon whether the object of the operation is simply to restore the anterior wall of the vagina, or whether circumstances demand the closure of the vagina anterior to the fistulous opening, so as to include the neck of the uterus in the bladder. In the first case, the normal relation of the parts is preserved, while in the latter, menstruation must be performed through the bladder, and sterility results. In large fistulas, the preference is given to the *A* inverted Y incision. The author then gives a detailed history of cases operated upon. We have only room for the results. In 11 cases operated upon from 1861–65, by transverse closure of the fistula, the results were: 10 fully cured; 1 fatal from peritonitis, on account of the including of the peritoneum in the sutures, in an attempt to secure the anterior lip of the uterus to the edge of the fistula. In this case, the peritoneum was found after death to extend lower down than usual. In one case, five after-operations were necessary, as on account of the thinness of the walls, small fistulas were left in the track of the sutures, although the finest silk and silver wire were used.

As regards the nature of the fistulas in these 11 cases, they were small and medium sized; 5 were uncomplicated; 2 were very difficult of access; 1 was complicated with considerable shortening and contraction of the vagina; 1 was attended with arterial hemorrhage necessitating ligature. In 1 hemorrhage took place in the bladder after the operation; in 1 the left ureter opened at the edge of the fistula; in one the anterior lip of the uterus bordered on the fistula.

Cases in which the Fistula was Closed in a Longitudinal Direction.—Of these there were 6 occurring from 1861–65. The diameter of the smallest fistula was two centimetres;

in 3 cases, three centimetres; in one there was intense catarrh of the bladder, which had existed some time before the operation; in another, catarrh of the bladder resulted from the irritation of a small piece of sponge which was accidentally left in the bladder. In one case very difficult of access, hemorrhage and diphtheritis followed. In one case, diphtheritis of the vagina and urinary organs followed, ending in death thirteen days after the operation.

Result: 5 cured; 1 fatal, from diphtheritis; 1 case previously operated upon unsuccessfully required five operations for complete cure.

Operations upon large Fistulas, performed 1863-4.—In these cases the defect was so large that union in a straight line, either transverse or vertical, could not be effected. The line of union was therefore made curved or angular, according to circumstances.

Of these there were 8. In 4 complete cure was effected in one operation. In the remainder, from two to seven operations were required. In the case requiring seven sittings, other operators had failed. An attempt had also been made to close the vagina in this case; this was fortunately also a failure.

Operations upon Compound Fistulas.—1863 to 1865. Of these there were 8, having 7 fistulas. The result was complete cure in all cases, with ability to retain the urine. In 1 case 3 fistulas were closed in one operation; in the 2d case, 2 fistulas required two operations. In the 3d case, 2 fistulas required three operations. In the 2d case, other surgeons had operated eight times, and Simon himself once unsuccessfully. The 3d case had been operated upon by others three times unsuccessfully.

Operations complicated with Atresia of the Urethra.—In these cases, numbering 5, the fistula was either cut away, bridged over, or closed by bringing the walls of the vagina together, anterior to the fistula. In these 5 cases there were 9 fistulas. In 4, the cure was made complete; in the 5th case, the patient was discharged as incurable, having undergone nineteen unsuccessful operations.

Cases of Kolpoplekisis, or Closure of the Vagina, by uniting the Walls anterior to the Fistula.—Nine cases are given having 12 fistulas. In all the 9 complete closure was the final result, though in some cases the operation had to be repeated.

The author then considers the *Accidents during and after the operation*, under the following heads:

I. *Wounding and Occlusion of the Ureter.*—The mere cutting of the ureter when it lies near the edge of the fistula is not followed by any particular trouble; cases, however, occur in which a portion of the ureter may be accidentally included in the sutures. The author thinks that, even in such cases, the resulting danger is but of a temporary character. Complete occlusion of the ureter probably never occurs. If only a portion is included, no serious consequences will result; but even supposing that the ureter should be entirely included, the fine sutures would, in the course of from twelve to eighteen hours, cut their way through (aided by distension of the ureter), and re-establish the communication with the bladder.

The remaining heads are merely indicated:

2. Primary and secondary Hemorrhage.
3. Injury of the Peritoneum.
4. Incontinence of Urine.
5. Retention of Urine.
6. Formation of Stone before and after the operation.
7. Croupous and Diphtheritic Inflammation of the Vagina.

In the second part, published in No. 95 of the same journal, the author considers minutely the operation of *Kolpokleisis*, which he claims to have been the first to perform. The operation was introduced under the name of *Transverse Closure of the Vagina* (*Querverschluss der Scheide*), in order to distinguish it from Vidal's operation of *Episiostenosis*, in which the closure is effected in a vertical direction. But the name of *transverse* closure is now no longer appropriate, since the author has succeeded in closing the vagina in an *oblique* direction, leaving the whole *length* of the vagina intact; therefore, he now calls the operation *Kolpokleisis*, and means thereby the *total* or *partial* closure of the vagina, by uniting the vaginal walls anterior to the fistula. For the details of the first case of *kolpokleisis*, the author refers to his publication in No. 35 *Der Deutschen Klinik*, 1856. He remarks that Sims's case first appeared in "Silver Sutures in Surgery," in 1858. The author says the idea first occurred to him in 1855, when two patients presented themselves having such large fistulas that union by approximation was deemed impossible. The author had already tried the operation of Vidal without success in a previous case. The operation of Jobert (transplanting from thigh or posterior wall of the vagina), having never been successful in the hands of the originator, the author concluded to bring the walls of the vagina together anterior to the fistula. The first patient operated upon, whose history is given in the *Deutsche Klinik* for 1856, is now, since the spontaneous closure of a small fistula remaining after the original operation, completely cured.

In freshening the mucous membrane of the vagina for *kolpokleisis*, the author recommends a superficial, but *very wide* ($1\frac{1}{2}$ to $2\frac{1}{2}$ centimetres) transverse or oblique circular ring anterior to the fistula.

In former operations the author always selected the lower third of the vagina for closure, considering that in the upper part, both on account of its greater width and difficult accessibility, that the prospects of cure would be far less favorable. Experience has taught him that this was an error. In recent cases he has not confined himself to that limit, but operated in *all* parts of the vagina, the object being to *preserve as much of the vagina as possible*, and has found that operations in the upper portion present better chances of cure than those performed in the urethral portion.

The operation may be divided, according to the situation of the fistula, into—

1. Total closure in the urethral portion of the vagina.
2. Total closure in the vesical portion of the vagina.
3. Total closure in the fundus portion of the vagina.
4. Partial closure in an oblique direction, with preservation of the whole length of the vagina.

As indications for the operation, the author considers the following:

1st. *Extraordinary Size of the Fistula*.—This was formerly considered by the author, and is still thought by many operators to be the principal indication for *kolpokleisis*; but since, by the employment of the curved and Λ incisions, he has obtained such favorable results in these cases, he does not consider this as much of an indication as formerly. According to his present experience, the *size* of the fistula can only demand the operation of closure when the curved or Λ incision, or the joining of the vaginal portion to the lower part of the vagina is impossible.

2d. *Inaccessibility of the Fistula*.—These cases, with the present improvements in exposing the parts, seldom occur. The author has met with only one case in which this cause necessitated closure. The fistula was situated in the upper and left part of the fundus, and the edges of the fistula were adherent to the bone. Three endeavors were

made to close the opening by uniting the edges, once in the author's position, twice in the position of Sims, using both silk and silver sutures, without success.

3d. *To Avoid Danger of Wounding the Peritoneum.*—In fistulas situated high up, near the mouth of and involving the uterus, this operation is to be preferred rather than take the slightest risk of including the peritoneum in the sutures.

4th. *Obstinate Hemorrhage in the Bladder after an Operation.*—Two cases in the author's practice were followed by such persistent hemorrhage that closure of the vagina was necessitated as a final operation.

5th. *Separation of the Vaginal Portion from the Fundus followed by Contraction of the Fistula Anterior to the Vaginal Portion.*—The author has twice observed this lesion, and thinks it better to close the vagina at its fundus, rather than endeavor to enlarge the fistula, draw out the vaginal portion, and join it to a portion of the fundus; believing that such an operation would present less prospect for recovery and be more dangerous on account of the abnormal adhesions contracted by the uterus.

6th. *Atresia and a high degree of Contraction of the Vagina above or beneath the Fistulous Orifice.*—In cases of contraction above the fistulous orifice, the liability to prolapsus of the mucous membrane of the bladder and the thinning of the walls of the fistula, render attempts to close the opening nugatory and closure of the vagina is to be preferred.

Adhesions of the vagina anterior to the fistula frequently demand the same operation, as in most of these cases the vesical wall of the vagina has suffered such changes in the vicinity of the fistula that the separation of the adhesions and freshening of the edges of the fistula can only be followed by an uncertain result.

7th. *Atresia of the Urethra with Compound Fistulous Formation.*—When in such cases the atresia is too wide to be bridged over and close the fistulous opening, kolpoplekisis is indicated.

8th. *For the cure of Fistulas complicated with direct Communication with the Ureters. Ureto-vaginal and Ureto-uterine Fistulas.*—In the ureto-vaginal fistula, the ureter opens abnormally into the vagina, while the normal opening in the bladder is closed. To restore the normal relation we must close the one and open the other. The author tried this repeatedly in one case with total failure as result. The artificial opening in the bladder soon closed, while the closure of the orifice in the vagina soon opened again; not only this, but the various attempts were attended with alarming symptoms of sudden retention of the urine and pain in renal region, frequent vomiting, fever, etc. These attempts were, therefore, abandoned and modified kolpoplekisis substituted. An artificial fistula was established just anterior to the mouth of the uterus, and directly anterior to this the vagina was closed. In this manner, the urine which before entered the upper part of the vagina through the ureto-vaginal fistula was compelled to enter the bladder through the artificial fistula established below the uterus.

We pass now to the *condition of the patient*, after a successful performance of the operation.

Chiefly to be feared after a successful operation was—

1st. *The possibility of the Penetration of the Urine into the Uterus, and from thence through the Fallopian Tubes into the Peritoneal Cavity.*—By means of an ordinary injecting syringe introduced into the mouth of the uterus water can be forced into the peritoneal cavity. It was thought that the same might occur from the backward pressure of the urine after complete closure of the vagina. These fears have fortunately never been

realized; not the slightest symptom has shown itself which would lead to any such supposition.

2d. *The Effect of the Urine upon the Uterus and Menstruation.*—The urine has generally been supposed to be such an injurious fluid that the constant moistening of the mucous membrane of the uterus by it, after closure of the vagina, would, it was thought, produce inflammation and ulceration of the parts thus abnormally exposed. Practice has taught us that these fears are also unfounded. After kolpoplexis the author observed no symptom which pointed to any inflammatory condition of the uterus. The urine in every case was free from an unusual quantity of mucus, and the uterus and its surroundings were at no time the seat of pain.

As regards *menstruation*, kolpoplexis has rather a beneficial effect than otherwise. In nearly every case in which the menstruation, *before* the operation, was either very irregular or wholly absent, it returned *after* the operation and assumed its normal type. The patients who before were pale and anæmic, gradually gained a healthy appearance. The author does not ascribe this to any favorable effect exercised by the urine, *per se*, upon the uterus, but to the removal of those causes which before rendered the lives of the patients miserable.

3d. *Stagnation of the Urine in the Bladder, and its Consequences.*—After kolpoplexis, the urine can never be entirely voided, because the posterior wall of the newly-formed urinary receptacle is not as contractile as the remaining portions of the bladder. The author says that *stagnation and its consequences were never noticed where the closure was complete.*

After complete closure the urine was always clear and light-colored, except at the time of the menstrual period, when it was discolored from the admixture of blood. In all the cases operated upon during the past seven or eight years, the author has had full knowledge of their condition, either from personal observation or by letter, and in no case has he seen or heard of any urinary difficulty. In a single case only there was a concretion formed in the bladder around a loop of suture which had accidentally been allowed to remain after the operation. After its removal the patient had no further trouble. In those cases where the closure was incomplete, the author has observed catarrh of the bladder and formation of stone. The small fistulous openings remaining, wet the patients, as before, so that they readily take cold, which brings on catarrh of the bladder, accompanied by decomposition of the urine. In those cases the urine was always turbid, and the fine openings through which it flowed were ulcerated. In these ulcerated openings the urine formed deposits, which increased in size, growing upward into the bladder, so as to form serious concretions. These concretions were attended with all the symptoms of stone in the bladder. They could, however, be very easily removed by lithotrity, as they were soft, consisting only of phosphates. In one of these cases the author, after removal of the concretions, closed the fistulous opening by another operation, since which time the patient has had no further trouble. In another case, where the patient refused to be again operated upon (having already undergone six operations), the fistula was enlarged, causing such an abundant flow of urine that the deposit was washed away before it had time to form into concretions. Where then the closure is incomplete, the best method to avoid depositions and concretions is the completion of the closure, and where this is impossible, the condition of the patient should be made more tolerable by the free enlargement of the opening, so that no concretions can form by reason of the abundant flow of urine.

4th. *Incontinence of the Urine by Adhesion of a Defective Urethra to the Posterior Vaginal Wall.*—A defect of the urethra must, remarks the author, always excite appre-

hension of persistent incontinence after the operation of kolpopleisis, not only from the defective action of the sphincter, but also from the tugging of the posterior wall at the point of adhesion; but, as has already been mentioned in the "accidents following the operation," practice has decided in favor of kolpopleisis to remedy this very defect. Pieces of the urethra, only one and a half centimetres long, after having been united with the rectal wall of the vagina, possessed power enough to withstand both the pressure of the urine and the tugging effects at the point of adhesion, so that the possibility exists of forming a continent urinary receptacle, even when, from the whole anterior wall of the vagina, from the fundus to the meatus, nothing remains but a portion of the urethra, one and a half or two centimetres long.

The author next considers the plastic lengthening of the vagina after the operation of kolpopleisis. His success in this field was only very limited. The greatest length super-added was only one and a half to two centimetres, hardly enough to satisfy the practical demands of any one so unfortunate as to be debarred from the proper exercise of the marriage function by the dernier resort of kolpopleisis. In this connection the practical question of divorce arises, and it was to allay fears arising from this that the author attempted to add somewhat to the length of the vagina. Neither the patient nor the doctor was satisfied with the result, but no serious consequences arose. This finishes the subject of urinary fistula.

In section 3 of the same paper the author considers the plastic operations involved in recto-vaginal fistulas and perineal fissures, as well as various operations for the cure of rectocele and prolapsus uteri, concluding his observations in the ninety-sixth number. This part of the subject is treated in the same original manner, and with a violation of those rules heretofore considered as essential to a successful result. As a striking instance of this we may allude to his after-treatment of those cases in which a portion of the posterior wall of the vagina has been included for the cure of perineal fissure. In these cases the author has entirely discarded the practice of controlling the evacuations from the bowels for a number of days, preferring the contrary treatment with cathartics.

He contends that loose evacuations do no injury to the well-united wound; while, on the contrary, the scybala resulting from prolonged constipation are apt to open the cicatrix. He gives, therefore, every third or fourth day two table-spoonfuls of oil or ten grains of jalap with two grains of calomel, in order to secure a thin liquid evacuation. The quantity and frequency of the evacuations must depend more upon the general condition of the patient as to strength than anything else.

Hypertrophy of the Prostate Gland.

In the proceedings of the K. K. Gesellschaft der Aerzte, *Wiener Med. Wochenschrift*, June 8th, 1867, Prof. DITTEL remarks that, in an anatomical point of view, hypertrophy of the prostate may present very different characters, accordingly as the cellular, glandular, or muscular element may be affected. It can further be partial or total. The determination, however, of the limit where the *normal* size ceases and the hypertrophy begins is not very exact.

Thomson has weighed some 50 glands to determine this point. Among these 33 were normal and 17 partly hypertrophied, partly atrophied. According to his investigations the normal gland should weigh 4 drachms, 38 grains; but, before we should regard a gland as hypertrophied, it should weigh over 6 drachms. Dittel has made observations in 115 cases. His material was taken from the poorhouse. Out of these 115 cases there were found 15 hypertrophied, 30 atrophied glands; the direct opposite of Thomson, who

found more cases of hypertrophy than atrophy. In a further investigation of these cases it was observed that enlargement of the prostate can exist without producing disturbance in evacuating the contents of the bladder. Again, the assertion that enlargement of the prostate is a senile affection, is only partially true.

Dr. Dittel then discussed the question, how it occurs that patients suffering with difficult urination and enlarged prostate often in the course of time are almost entirely relieved, and the obstacles preventing the passage of a catheter also gradually disappear, the difficulty of urination not unfrequently being converted into incontinence.

Two anatomical facts here deserve especial consideration. The sphincter vesicæ contains not only circular fibres, but it also sends fasciculi to both lobes of the prostate. There must, accordingly, be an influence exercised upon the situation of the sphincter and the prostatic portion of the bladder by any alteration in the size of the prostate. A second fact is the relation of the pars intermedia of the prostate, which was thought, in cases of partial hypertrophy, to get behind the sphincter vesicæ.

Dittel proves, from numerous preparations, that the case is directly the contrary. In bilateral hypertrophy the enlargement of the organ takes place posteriorly and superiorly; the sphincter must, therefore, be elevated, where it forms a sort of valve, rendering catheterization impossible. After a time this may correct itself by the penetration of the hypertrophied mass into the sphincter, and, so to speak, lining it; now an opening is formed; or it can degenerate into a lump incapable of performing its function, whereby incontinence arises.

It will be perceived in these cases of bilateral hypertrophy where the sphincter is raised up as it were in the form of a roof, that the introduction of the ordinary catheter is impossible. In order to reach the bladder we must reverse the curve of the instrument.

A New Prostatic Catheter.

Prof. DITTEL then exhibited a catheter constructed by him with a view of overcoming this difficulty. It consists of a metallic tube like the ordinary catheter in which a second tube is inclosed; by means of a screw attachment on the handle, the second tube is made to pass through an opening in the first. The second, or inclosed portion has a curve directly opposite to that of the first. When with such a catheter we reach the point of difficulty, we can by means of the screw cause the internal portion to protrude in an opposite direction and so become master of the situation.

Prof. TURCK believed that this object could be accomplished much easier by taking a gum-elastic catheter containing two springs of unequal power and directly opposed curves. The stronger spring keeps the catheter in position till the obstacle is reached, now withdraw the stronger spring and the weaker one acting alone throws it in the opposite direction. He had used such an instrument in investigations of the posterior nares.

VII. SKIN DISEASES.

The Nature of Keloid Tumors.

Dr. PHILIP PICK, of Prague, discusses this subject in the *Wiener Med. Wochenschrift*, July 20th, 1867. He gives a case treated by cauterization with potassa fusa. The result thus far has been successful. It is now about eleven months since the caustic was

applied, and there is no sign of recurrence. The tumor in this case came on without any exciting cause, either traumatic or constitutional. Dr. PICK regards the process of formation of cheloids as one beginning in local atrophy, which is gradually replaced by fibrous tissue similar to that of an ordinary scar. If we adopt this idea, rejecting the old views connecting it with carcinoma or syphilis, we will have a disease anatomically distinct and easy of diagnosis.

The Pathology of Psoriasis.

Dr. NEUMANN in the proceedings of the K. K. Gesellschaft der Aerzte, *Wiener Med. Wochenschrift*, July 20th, 1867, gives the result of a careful microscopical examination of a portion of skin taken from a patient suffering with this disease. The specimen was macerated in a solution of gelatine, and the best sections treated partly with acetic acid, partly with alkaline solution of carmine. The epidermic cells and the rete Malpighii were developed in a high degree. The papillæ were hypertrophied and filled with numerous cells. The corium was also filled with a luxuriant growth of cells. These were especially abundant in the neighborhood of the capillary vessels. This cellular growth sends forth processes to the points of the papillæ and upper layer of the corium. In following the course of a large vessel of the corium and the branches distributed to the papillæ, the smaller branches near the point of the papillæ will be found to be intertwined and much convoluted. In this situation the cells accommodate themselves to the course of the vessels, taking either a horizontal or oblique direction. A transverse section of the papillæ shows the cellular growth very plainly, nearly filling up the stroma through which the vessels take their course. From this examination, it appears evident, that psoriasis essentially consists in an inflammatory process, having its seat in the upper layers of the corium and the papillæ accompanied with the abundant production of cell-growth causing hypertrophy of the papillæ. The excessive growth of epidermis is due to the active deposit of cells in the Malpighian layer which furnishes new material as fast as the epidermis scales off.

Shedding of the Nails from Vegetable Growth,—Onychomycosis.

A case of this rare disease is detailed by Dr. J. NEUMANN, of Vienna, in the *Wiener Med. Wochenschrift*, June 29th, 1867. It occurred in a young woman 26 years of age. She has now had the disease for some twelve years. Every year the nails are shed five or six times. The patient has no disease of the skin, with the exception of a trifling eczema on one of the lower extremities. The disease has attacked all the nails of the right hand, and the nails of the first third and fourth fingers of the left. It has also attacked three of the toe-nails on the left, and one on the right foot.

The surface of the diseased nails is rough and of a dirty yellow color. The anterior border is very thick. The nails move easily in their bed, and are easily split,—held up to the light a number of yellow and transparent spots can be observed. The under portion of the nail is covered with a dust-like layer; this being examined under the microscope is seen to consist of threadlike vegetable growths branching in different directions. The spores are round and contain germinal particles. Dr. Neumann has not yet determined the nature of this rare form of fungus.

VIII. GONORRHŒA AND SYPHILIS.

Syphilis.

THE following is an abstract of some of the leading points of interest in the Report of the Committee appointed by the Lords of the Admiralty to inquire into venereal disease, to diminish its effects in the army and navy. (*British Medical Journal*, June 1st, 1867, p. 647.)

I. The committee affirm there is a syphilitic virus, and that syphilis is a disease as specific as small-pox.

II. As to the *origin of syphilis*, several of the witnesses and a portion of the committee concurred in the belief that syphilis, under favoring circumstances, may be generated spontaneously. That syphilis was first introduced into Europe at the latter end of the fifteenth century, is an opinion now entertained by the few.

III. Of venereal sores they describe two species: the *syphilitic* and *simple*. The *simple local sore* is the most common (in the ratio of four to one, over all other varieties); its influence never extends beyond the inguinal glands; it is eminently contagious; like gonorrhœa, it is often the product of irritating and contagious secretions.

IV. The syphilitic sore is seen under three forms: one characterized by induration throughout its entire course; one soft in its early stage and becoming subsequently indurated; and one soft through its whole course, but which, unlike the simple local sore, is followed by constitutional disease.

The evidence is conclusive as to the impossibility of pronouncing with certainty upon the character of a sore on its first appearance, *i. e.*, as to whether it will or will not be followed by constitutional symptoms; in other words, whether or not it be a syphilitic sore. As a rule, however, the exceptions to which are rare, a soft sore, whether followed by suppurating bubo or not, is only a local disease, and does not infect the constitution; and an indurated sore, more especially if accompanied by indurated inguinal glands, does infect the constitution.

V. The constitutional manifestations of syphilis follow the primary sore at an uncertain interval of time, ranging from four to ten weeks, the average term being about six weeks.

Although the evidence tends to the belief in the occasional development of any of these forms of eruption and other disease, in a given case, the committee have sufficient ground for expressing their opinion that the dry and painless forms of eruption, *viz.*, psoriasis, lepra, and tubercle, but especially the two former varieties, constitute the predominant symptoms following the indurated sore, and that the remainder more commonly follow the varieties of the soft or moist sore.

VI. *Syphilis in its ultimate form* is capable of affecting every organ of the body. The changes which occur in the inveterate forms of the more advanced stages of syphilis, are due to the deposition of a fibro-plastic material in the various tissues of the body. This product appears to be identical with that which, in the so-called "secondary" stage, is exuded in the bones, in the glands, on the iris, and indeed in the indurated chancre itself; but is now liable to be poured out in any structure where areolar tissue exists. In addition to these characteristic and peculiar effects of syphilis, there is a tendency in those who have long been its victims to suffer from degeneration of the tissues of the body; and thus a very frequent cause of the mortality in long-standing syphilis is a universal fatty or lardaceous decay of the organs.

VII. *Hereditary syphilis* is the cause of a number of cases of still-births and abortions, and of well-known changes in the development of the infant. Thus, very often the whole body is puny, the forehead projects, the nose is flattened, the skin around the mouth is often puckered from old ulcerations; and lastly, and most important, a peculiar change takes place in the teeth, the incisors being dwarfed in size, narrowed, rounded, and notched.

VIII. As to the *period of incubation*. Upon the whole, the weight of evidence greatly preponderates in favor of the view that there is no definite period of incubation, either for the infecting or the non-infecting sore; assuming the term incubation to imply such a uniformity as exists in the period of incubation of other specific diseases, as measles, small-pox, etc.

IX. As to the date expressed at which the constitution is involved. It is possible that the poison of syphilis may be carried into the circulation from the moment of contact, in whatever manner that is effected; but it is more probable that time is required to this end.

X. The *mode* in which the poison is received into the system is equally doubtful.

XI. As to the question of *unity or duality of virus*, they add, that there is probably but *one* true syphilitic poison exerting its influence upon the soil in which it is implanted, producing various forms of true syphilitic sores, differing in different individuals, modified by health, and by constitution, by locality, and probably by its ever-varying intensity.

XII. Of thirty-three witnesses, twenty-three asserted that one attack of syphilis gives no future immunity.

XIII. As to *relapses*, and the period of safety for marriage. The subject admits of division into safety as respects imparting the disease in its secondary stage to the other sex, directly through the medium of the secretions; and safety as respects imparting it indirectly, through the fœtus to the mother. Some witnesses do not admit the former liability, while the majority consider that secondary disease may be directly imparted through the medium of a moist secretion, as from a tubercle; but all agree in the belief that a syphilitic father, though presenting no appearance of disease, may beget a syphilitic child, and that that child, through the medium of its blood, may impart the disease to its previously healthy mother.

XIV. Evidence is conclusive to the effect that syphilis may be communicated by intercourse during either of its stages, local or constitutional.

XV. *The Local and other Varieties of Soft Sore*.—The simple or non-infecting sore (and, indeed, all sores unmarked by specific induration) should be treated almost entirely by local applications, having for their object to allay pain or inflammation, and protect the sore from injury. There is no remarkable feature in the progress of the inguinal glands toward suppuration which demands comment. Their liability to suppurate, however, renders the destruction of the sore by escharotics desirable. Such treatment should only be resorted to in the earliest stage of the sore, and probably not later than two days from its first appearance.

Mercury will neither arrest the progress of glandular enlargement, nor prevent suppuration.

The balance of two opinions is rather favorable to treatment of the primary hard sore by mercury. The alternative to the employment of mercury consists in simple local treatment, the avoidance of local irritants, whether medical or mechanical, attention to cleanliness, and to the improvement of the general health.

If treatment by mercury be selected, the agent should be administered more freely to

a strong and vigorous person than to one of delicate habit; and whatever the mode of exhibition, whether employed internally by the mouth, by inunction, or by means of vapor-baths, the first indication of its presence in the system should be accompanied by a reduction of the quantity employed, and the reduced dose maintained so long as an impression is made on the deposit, and the bodily health of the individual remains undisturbed.

Treatment of primary sores, whether by excision or by escharotics, constitutes a prominent feature in the modern practice of surgery, and, under favorable conditions, may be resorted to with great advantage.

In the case of the soft infecting sore, it is obviously of great moment to destroy the local poison, and avert the train of constitutional symptoms which may possibly, nay, probably will, follow. Should the destruction of this sore by caustic fail of its object by reason of its imperfect application, or of the too advanced stage of the sore, it is not improbable that the consequences would be injurious, and that an earlier development of the poison in the system would result. The rule of practice, which limits the operation of destruction to the two or three days from the first development of the sore, must, therefore, be strictly adhered to. For the reasons before given, it is an operation which can rarely be resorted to with a prospect of success in the hospital class of patients.

The application of local agents for the purpose of destroying the hard sore is useless.

XVI. *Treatment of Syphilis, i. e., Constitutional Disease. Mercury.*—The opinion of the committee is unanimous in favor of mercury as the most efficient agent yet known in the treatment of constitutional syphilis. Mercury cannot be deemed a specific in the ordinary acceptance of that term, and does not appear to exercise any direct influence on the poison of syphilis, but on the effects of the poison only. If there be any forms of syphilis in which mercury is especially contraindicated, they are the pustular and rupial forms of the disease. When the gums and breath are affected, it may be inferred that the maximum quantity of mercury that can prove serviceable in the treatment has been reached, and it is desirable to reduce the quantity.

Sarsaparilla possesses no especial virtues of its own, and is inferior to the various forms of bark.

The same remark may be made of guaiacum, sassafras, and of the Indian root Mudar, which at one time was largely employed by the natives of India as a supposed antisymphilitic agent.

Upon this important branch of their instructions, the committee are of opinion, 1. That, until a more efficient remedy be discovered, the occasional employment of mercury cannot be dispensed with; 2. That, employed in moderation, and under judicious restrictions, it is to the large majority of constitutions harmless; and 3. That, when employed in such larger quantities as will cause salivation, the excess is not only useless, but assumes the character of a poison.

The belief in the value of mercury as an antisymphilitic agent is strengthened by observation of its remarkable influence in the hereditary syphilis of new-born children. The evidence of the witnesses testifies strongly to the value of mercurial treatment, by which children in great numbers are annually restored to health.

XVII. Although they have reason to believe that *syphilization* may prove serviceable in such chronic cases as have failed to yield to more ordinary treatment, they have no sufficient evidence of its curative properties to outweigh the obvious objections to its general employment; and, even accepting the entire truth of the reports of its curative powers, the treatment is repugnant to the habits and feelings of the profession in this country, and, in the majority of cases, is slow of operation.

XVIII. The syphilis of infants has no enemy to contend with more potent than a weak and anæmic state of the constitution, which disappears on the improvement of the general health. The disease, for the most part, according to the evidence above referred to, attacks children ill-nourished and ill-tended, who consequently fail in vigor of circulation. These children are placed on a nourishing diet, and supplied with strengthening remedies, medical and dietetic; and the disease subsides, and the cure is declared to be effected at a shorter date than that obtained through treatment by mercury.

Such is the evidence before the committee, founded, however, on a rather limited number of cases, but which, although numerically small, is sufficiently important to claim the attention of the profession, and to justify a renewed inquiry in a larger and more general field of observation.

XIX. *Phagedæna*.—In nearly all forms of phagedæna, the morbid action will cease on the destruction of the affected part. The agent most generally resorted to is nitric acid, which, in the less active forms of the disease, may be reduced in strength by the addition of three, six, or eight proportions of water. In the severe and destructive examples, nothing short of the strong acid, or any other equally powerful escharotic, will suffice to arrest it. The constitutional forms are extremely intractable. They defy the ingenuity of the surgeon, and set at naught every variety of remedy brought to bear on them. With a worn and debilitated frame, bark, iodine, mineral acids, wine and nutritious food, and the freshest accessible atmosphere, are the principal remedies on which reliance must be placed.

[*Mirabile dictu*, no reference is made by the committee to the use of the iodides of potassium, sodium, and ammonium, which remedies almost hold the same relation to constitutional syphilis that sulphate of quinine does to intermittent fever.]

In commenting on this Report of the Venereal Commission, Holmes Coote, Esq., F.R.C.S., Surgeon to St. Bartholomew's Hospital, says (*British Medical Journal*, June 22d, 1867, page 729):

According to this report, the frequency of constitutional symptoms to sores of all kinds should be four to one. Taking the female venereal cases which are in constant succession under my care, I should pronounce the number at least one-half; and then, many who quit the hospital apparently well, and not generally infected, suffer from secondary symptoms afterwards. So also, among the men, secondary symptoms are common; but the induration of the base of the primary sore is of rare occurrence, and is scarcely ever seen in women.

I see no reason to change my opinion from that which has been already published and expressed; namely, that there is but one venereal virus, the action of which is usually chronic, and always ulcerative. The character of the sore thus produced depends, as in any other case, on the nature of the tissue on which it acts; and, *cæteris paribus*, the same tissue presents the same kind of venereal ulcers. These ulcers are not precisely similar in the male and female; nor in the former are they always the same, inasmuch as they vary in character just as often as the tissues composing the penis vary in their intimate structure.

And, again (*British Medical Journal*, July 6th, 1867, p. 5):

Too much publicity cannot be given to the following statement (in which I fully concur) made in the Report of the Venereal Commission: "Hard sores do not necessarily

contaminate the constitution; while, on the other hand, constitutional symptoms occasionally follow the presence of a sore, which might have been regarded as a simple local sore by a practised observer." (P. 9.) It follows, then, that, for all practical purposes, the greater part of that which has been written about simple and syphilitic ulcers, about the pathological differences between indurated or infecting and soft or non-infecting ulcers, etc., is nearly useless, and in many points likely to mislead. As stated in the above report, "too much caution cannot be exercised in giving an opinion as to the future safety of the patient." In short, an ulcer following impure connection must always be regarded with suspicion by the surgeon; and I could not with certainty and at once name the time when the individual might regard himself as sound, however slight the primary symptom, even though it have been but a so-called excoriation.

The report proceeds to say (page 9) that "the constitutional manifestations of syphilis follow the primary sore at an uncertain interval of time, ranging from four to ten weeks," the average being about six weeks. But I presume it will not be denied that such manifestations often appear much earlier. I have at the present time under treatment a man who dates the primary sore, the bubo, and the cutaneous eruption, as simultaneous; I think that the average is less than six weeks, and is very often influenced by the habits of the patient and by his general health.

The Paris correspondent of the *British Medical Journal* (July 6th, 1867, p. 14), mentions a warm discussion which had taken place at the Société de Chirurgie, Paris, in which another attempt had been made to deprive mercury of its attributes as an antisyphilitic. M. Verneuil summed up his own opinions in the following conclusions, which appeared to reflect the general opinions of the Society:

1. Syphilis should be treated the moment the diagnosis is firmly established. It is useless to delay.

2. If a treatment by expectation may be of use in some cases to render the diagnosis more positive, it also occasions the loss of valuable time, and allows the syphilitic virus to instil itself into the economy, and to produce important changes in the anatomical elements and humors of the body.

3. The treatment should be continued during a long while.

4. Some syphilides will doubtless recover without any treatment. These cases are, however, rare, and it is impossible to recognize them beforehand. Granting, however, that treatment is useless, it is at any rate harmless.

5. Till some new remedy is discovered, mercury is, and will remain, the most powerful agent against the primary accidents of syphilis. If it cannot be quite admitted that its action against the disease itself is proved, it cannot be denied that it modifies the manifestation of the disease.

6. It is certainly as efficacious as any other treatment in mild cases; and it is indispensable in severe and tenacious ones, as well as in those of visceral syphilis, or in those of gravid women or new-born children.

7. A mercurial treatment, well instituted, accompanied by wise hygienic precautions, a proper regime, and a judicious use of tonics, in the immense majority of cases is perfectly innocuous; and it is most important that the non-medical public should appreciate this fact.

8. The problem of how to obtain the cure of syphilis without mercury has not been resolved, and there is no reason to suppose that it will be.

9. The treatment by potash has apparently no superiority over mercury.

New Method of Treating Gonorrhœa.

Mr. BERKELEY HILL, of University College Hospital, sends to the *British Medical Journal* for July 6th, 1867, p. 7, an account of the treatment of gonorrhœa by oil of sandal-wood.

He has tried the oil of sandal-wood in nineteen cases of urethral discharge of some weeks' or months' duration. Its efficacy, though uncertain, is often very marked. In several cases, it arrested the discharge by the third day; and, when taken for seven days, prevented any further return. Of the nineteen cases, the oil was of marked benefit in thirteen. In six, no benefit resulted from its use; and in four of these, any dose, however small, produced nausea or disturbance of the stomach. In two of the six, the drug had no controlling effect even when taken in two-scruple doses twice daily.

Of the thirteen favorable cases, cubebs and copaiba had been employed previously in seven without any advantage. In three of the seven, the copaiba produced too much disturbance to be borne; so that from these it would seem that some stomachs tolerate oil of sandal-wood that cannot bear copaiba. In all the patients one injection, in some several, had been employed before the oil was prescribed.

In the nineteen cases, the dose most often tolerated was fifteen drops, taken three times a day, with a little liquor potassæ, in peppermint water; but eight drops in two patients had the desired effect, while forty drops were taken by three patients at a dose without producing intolerance. In these cases, all other treatment was laid aside while the oil was being given. The oil was generally taken a week before the patient was able to leave it off.

Mr. Hill has not employed oil of sandal-wood in the acute stage of gonorrhœa. In these cases, he gives alkalies in frequent doses, with or without purges and anodynes, as required.

Dyscrasia Syphilitica—Neuralgia.

JOSEPH ADOLPHUS, M.D., of Hastings, Mich., writes to the *St. Louis Medical Reporter* for June 1st, 1867, p. 193, on the enduring influence of the syphilitic poison on many of the tissues, which fact, he thinks, has not received sufficient attention. Nervous disorders resulting from this toxic influence are most interesting.

It is evident that this form of syphilitic disease is certainly brought about by a certain depravity of nutrition.

When a dyscrasia syphilitica is established, its existence is dependent on some particular tissue being selected by the poison as its special abode, and in which it works certain vital changes which affect the process of local nutrition. This is not dependent on any essential condition in the blood, either primarily or secondarily. The process of nutrition is through the morphological elements of the tissue itself, modified by the presence of the toxic agent.

The condition of tissue to which the poison attaches itself is not altogether of a pathological type. Often there are no visible changes. This is more particularly the case with the nervous tissue.

The usual treatment employed by Dr. Adolphus is :

R. Pulv. Podophylli,	3j.
Pulv. Corydalis Famosæ,	3ss.
Pulv. Hydrastis Canad.,	3iij.

Prepared by displacement with boiling water so as to make a pint, to which add iodide of potassium ʒvi. Mix. Take of this ʒj three times a day.

The concentrated tr. of nux vomica is a good remedy in these cases. A decoction of yellow cinchona, with the infusion of podophyllum and hydrastis canad., are good remedies. I prefer them made by displacement with water. Mercury is a very treacherous remedy, and often does more toward seating the poison and maintaining its existence in the system.

The preference of the syphilitic virus for white and yellow fibrous and yellow tissue should ever be borne in mind. The action of iodide of potassium is really on the fibrous tissues. In treating this disease in its secondary and tertiary form, I must lay great stress on the cod-liver oil; but, to make it really valuable, the eliminating powers of the life forces must be attended to, and nothing equals the root of podophyllum pelatum or common mandrake. The alterative properties of this article are unequalled; hence its utility with tonics.

Concerning the Treatment of the First Signs of Syphilis.

Prof. VON SIGMUND, in the *Wiener Med. Wochenschrift*, discusses the treatment of accidental poisoning by syphilis, and gives the result of a number of cases occurring in medical students, nurses, and waiters upon the sick in the venereal wards. Of these, 11 were exposed without being afterwards infected with the disease, though they were in daily contact with syphilitic patients. Of 57 cases inoculated by reasons of abrasions, cuts, chaps on the hands and other parts of the body, 35 were treated by caustics, and 22 without. Of these 35, 10 were afterwards taken with syphilis. Of the 22 not cauterized, 11 afterwards took the disease.

In the 35 cauterized, the caustic was applied on—

9 on the first day after the injury.			
6	"	second day	"
9	"	third	"
3	"	fifth	"
2	"	sixth	"
1	"	seventh	"
3	"	ninth	"
2	"	tenth	"

Of these, there were infected—

1 cauterized on the first day.			
2	"	third	"
2	"	fifth	"
2	"	sixth	"
3	"	ninth	"

Of the 24 cauterized on the first three days, only 3 were infected; of the 11 later cauterized, 7 were infected; of 15 cauterized on the first two days, only 1 was taken.

Whatever explanation is attempted of these figures, the proof still remains, that suspicious sores or injuries should be cauterized within the first two or three days.

Various caustics were used, with about the same result, for the reason that in each case the most suitable caustic was selected. In deep wounds involving the tissues, potassa cum calce or sulphate of copper was used; in more superficial injuries, a concentrated solution of bichloride of mercury in alcohol.

The Treatment of Syphilis without Mercury.

Dr. JOSEPH HERMANN, Chief Physician to the Royal Institute for the Poor, in Vienna, makes a request, in No. 52 *Wiener Med. Wochenschrift*, of physicians generally, and

those interested in syphilis in particular, to describe those forms of syphilis which, according to their experience and conviction, cannot be cured without the administration of mercury. In No. 57, July 17th, 1867, of the same journal, he makes an explanation of the request. He declares that it is made purely for the interest of medical science. He believes that the mercurial doctrine must be put to the test of comparison with other methods, and desires to furnish proof:

1st. That all forms of syphilis can be cured without mercury.

2d. That in the treatment of syphilis without mercury, and by observation of the course of the disease, the latter can be restricted to certain definite limits, and that the form which he has called *Hydrargyrose*, and which the opponents of his method of treatment have designated as constitutional, or more correctly, tertiary syphilis, does not make its appearance.

3d. That the forms of the disease called by him *hydrargyrose* will be proved to be such by physical experiments.

As a necessary preliminary to the whole question, he deems it requisite to have a full knowledge of those forms of syphilis which cannot be cured without mercury, and since among twelve thousand cases of syphilis occurring in the institution under his charge, no such forms were found, he makes application to all experts to make known their cases.

Early Bubo in Syphilis.

Dr. BOURQUET (of Aix) read a treatise on *Early Bubo, considered as a Primitive Accident of Syphilis*. The author records the following conclusions:

1st. Early bubo cannot be explained in the great majority of cases, by the simple excitation accompanying coitus.

2d. It should be considered as making part of the entirety of symptoms (venereal) under the same title as hard and soft chancre, blennorrhagia, balanitis, warts, etc.

3d. It is susceptible of transmitting its kind, and can be transformed by filiation to a venereal disorder of a different nature.

4th. Facts, scrupulously observed, will not allow us to doubt that it cannot be followed, exceptionally by constitutional syphilitic disorders.

5th. It would be desirable that statistics compiled with care, and bearing on a great number of facts, should be arranged, in order to establish the degree of frequency of early bubo, and the proportion of the cases in which it is followed by consecutive (or secondary) syphilis.

6th. Analogous statistics would not be less important for other primitive accidents independent of indurated chancre.—*Gazette Médicale de Paris*, Oct. 26th, 1867.

Registration of Prostitutes.

Mr. DRYSDALE, of London, defended the rights of women. The registering of women who abandon themselves to prostitution, and their visit to the bureau of morals, contribute to debase them more and more. It is perhaps a necessity to diminish variola, but it is a cruel necessity, first, to establish it. "Is there less syphilis in Paris, than in London?" asked Mr. Drysdale. No, without doubt; he never perceived it. As for syphilization, Mr. Drysdale was a partisan for it. He had seen M. Boëck, by this method, treat at London eighteen diseased prostitutes, and the results, excellent indeed, lasted for several months.—*Internat. Med. Cong., Gazette Hebdomadaire*, Sept. 6th, 1867.

Professor SEITZ presented statistics of venereal affections, treated in the hospitals of Munich, before and since the Bavarian law of 1861, which entails severe punishment on any woman who practises prostitution. The number of men affected with venereal diseases has increased ever since that time, and is now more than double what it was formerly. M. Seitz concluded that it was impossible to hinder prostitution, by decreeing against it severe punishments; that the change to clandestine prostitution made it still more objectionable, and that it was better to authorize it in certain just limits, and to regulate it.—*Ibid.*

IX. DENTISTRY.

Removal of Inferior Dental Nerve.

Prof. GREENE, of the Medical School of Maine, performed the following interesting operation in the case of a lady aged 54, reported in the *Boston Medical and Surgical Journal* :

About three years ago, she began to suffer from pain at the angle of the lower jaw on the right side. This was paroxysmal in its character; but the attacks were so frequent and severe as to unfit her for usefulness or enjoyment. Her sufferings had been much increased during the past year, and the pain now affected the whole side of the face, being quite severe in the *infra*- and *supra*-orbital regions. There was no tenderness or swelling; no apparent derangement of the general health that was not referable to the local suffering. She had undergone most thorough medical treatment, both general and local, in the hands of good physicians, with no avail. Hypodermic injections of morphine and atropia had failed to afford any marked relief. Prof. Greene said, that from the fact that there was no failure of the general health previous to the local trouble, and none now except the debility, fairly attributable to the long-continued pain, and also the fact that the various plans of treatment, whether alterative or tonic, combined with the most powerful anodynes, had failed, it was probable that the disease was local in its character. Whether the inferior dental nerve alone was involved, or whether the main trunk of the fifth pair was diseased, was doubtful, but as the pain was so completely localized at the angle of the jaw at the outset, and so remained for many months, the probabilities were that the pain along the other branches was reflex. At any rate, it was one of those cases where we are justified in trephining the jaw and exposing the nerve. We might find the nerve inflamed or softened, or pressed upon by a little bony tumor projecting within the dental canal. Oftentimes these cases were associated with and dependent upon otitis or caries, but here there was no evidence of diseased bone. The two last molars had been extracted years before, but the parts seemed healthy. Dr. G. had operated in one case where the nerve and the surrounding bone appeared perfectly healthy, but perfect relief followed division of the nerve.

"Ether was given, and a curved incision, with its convexity looking downward and backward, made over the angle of the jaw, the bone carefully exposed, and with a small trephine a button of bone removed, exposing the dental canal. The nerve was found so much softened as to lacerate readily when the attempt was made to raise it from its bed. The exposed portion was all removed, the wound closed with silver sutures, and a wet com-

press applied. The relief from pain at this point was immediate and complete. The lady slept well without anodynes, and in a week returned home well, with the exception of some pain still existing in the infra-orbital region.

"At the end of six weeks she returned, complaining of a great increase of suffering. The pain was well localized, and entirely neuralgic in its character. Ether was again administered, and by a curved incision the nerve was exposed at its exit from the infra-orbital foramen. It appeared to be perfectly healthy; but, upon cutting away the walls of the canal for half an inch, a little sharp exostosis was seen upon the right side, pressing upon and flattening the nerve. This was removed, the wound closed, and simple dressing applied. The relief was immediate and complete. The patient remained well two months afterward, since which there is no report from her."

Atmospheric Pressure at Great Heights insufficient to Support Artificial Dentures.

The *Scientific American* states: The city of Austin, Nevada, is six thousand feet above sea level. The air is so thin that the least physical labor causes great shortness of breath, and the atmospheric pressure is so light that those of its four thousand inhabitants who find it necessary to wear artificial teeth, experience extreme difficulty in keeping their sets in position.

Loss of Teeth.

There were exempted from military duty of the drafted men examined 10,810, or at the rate of 17.87 in the thousand. The average of exemptions from this cause was found to be lowest in the two following States: West Virginia, where 1815 were examined, the rate of exemption was 7.16 in the thousand; and in Kentucky, in an examination of 18,816, the average was 7.67 in the thousand. In the following three States the exemptions ranged highest: In Massachusetts, in the examination of 86,380, the average number disqualified in each thousand was 34.55; in Connecticut, where 11,017 were examined, the average number exempted was 27.68 in each thousand; and in Pennsylvania, where 144,724 drafted men were examined, this condition prevailed to an average that disqualified from military duty at the rate of 20.77 in the thousand.—*Dental Cosmos, from Medical Register, District of Columbia.*

On the Cause of the Premature Decay of the Permanent Teeth.

At a meeting of the Western Medical and Surgical Society of London, Dr. MARTYN read a paper on this subject. The author's view is, that teeth perish prematurely because they are faulty in structure, faulty in a too porous and fragile enamel (often marked by a chalky appearance) and dentine, and, their other structures being of no better quality, they yield more or less early to the wear and exposure to which they are subject. The defects of structure, he believes, are not due to delicacy of health—want of vital force, so to speak—but really to insufficient use during the formative process or development of the teeth. Human teeth are intended to grind grain, but in civilized life, from the cradle upward, they have really little of their natural work to do; but cookery does it for them. A crust of bread is nearly the chief *pièce de résistance* put to table. There is enough, doubtless, of tough meat, but this does not give grinding work. The supporting structures

of the teeth—viz., the alveolar processes—suffer in a like degree from insufficient use. This is shown in any mouth from which a grinder has been removed. The opposing tooth soon projects from its bed into the space of the lost tooth; next its fangs become exposed, the tooth loosens, and ultimately drops out, or it may be that caries attacks the parts unsheltered by enamel, and the tooth is lost. What happens is, that the alveolar process connected with the unopposed tooth, losing its natural stimulus—grinding pressure—becomes absorbed, its lining periosteal membrane degenerates, probably becomes spongy, and so forces the tooth from its bed. The author has endeavored for some time to carry his views into practice, and has selected the navy biscuit as a suitable article of diet in the place of bread.—*Med. Times and Gazette.*

Effects of Syphilis on the Growth of Teeth.

In the *London Lancet* Dr. SAMUEL WILKS describes the alteration produced in the shape of the permanent teeth by hereditary syphilis. He says:

Owing to the pulps of the permanent teeth having been involved in the inflammation at an early period of childhood, the formation of the teeth becomes altered, seen especially in the incisors; these are dwarfed, rounded, narrowed, and notched. With regard to the teeth, you are no doubt aware that much skepticism exists as to the correctness of the observations that have been made, and therefore I may remark that having had my attention early drawn to the subject by Mr. Hutchinson, I have taken many opportunities of testing its truth, and I have not the slightest hesitation in giving in my adhesion to his views in every particular.

Explosion of a Tooth.

The following "strange story" is given on the responsibility of the *Dental Cosmos*:

"Dr. A., a gentleman some forty years of age, and a physician in very good standing, called on me a few days since to have a tooth filled. Upon examining his teeth, I noticed upon the external surface of the left upper central incisor a very fine line near the centre of the tooth, and running parallel with its cutting surface, plainly indicating a fracture in the enamel, if not deeper. After carefully examining the tooth, I found it perfectly healthy and sound in every respect. I called the attention of the doctor to the circumstance, and asked if he could explain it to me. In reply to my question, he made the following statement, which I give in his own words: 'When I was about twenty years of age, I suffered most intense pain with that tooth, the pain coming on quite suddenly one night at supper. It being a very cold night, I endured my agony until the next morning, when I mounted my horse, and started for a physician, intending to have it extracted. I had gone but a short distance, when the pain, which seemed to be increasing every moment, stopped as suddenly as it began. In a few minutes after, I called at a neighbor's house for some water, and in place of the water took a piece of ice into my mouth, and as soon as it came in contact with this tooth, it *exploded, making a noise equal to the bursting of a shell!* I really thought that the top of my head was blown off! There was no pain, not the slightest uneasiness in the parts at the time, nor has there ever been since.' Such is the statement of my friend, and I leave it with you without any comment, only adding, a more reliable gentleman does not live in this country."

Causes of Odontalgia.

The causes of Odontalgia are as follows :

- 1st. And most common, an exposed pulp.
- 2d. A carious cavity, exposing highly organized dentine,—sensitive dentine, as it is called.
- 3d. Inflammation of a pulp, without its exposure.
- 4th. Inflammation of alveo-dental periosteum.
- 5th. Sympathy.

Dental Paste.

A paste universally employed by the dentist for the destruction of the dental pulp, is made by rubbing together equal parts of arsenious acid and acetate of morphia, with just enough of creasote to make a mass. A piece of this mass, or paste, about the size of an ordinary pinhead, is put into the cavity of decay and covered with wax or cotton. It is not used for children's first teeth, as its action would be apt to extend through the open foramen. If a tooth should be aching at the time of application, the pain will be increased for a short time. A proper mode is to precede the application by a drop of dilute creasote or other obtunding agent.

Toothache Drops.

An admirable mixture is made by combining in equal parts, creasote, laudanum, chloroform, tinct. aconite, tinct. of iodine, and lead water. To be applied on a pellet of cotton. This will be found a highly serviceable prescription for ordinary family use.

Spongy Gums.

Scarify freely, and apply in proportion varying to meet the indications, tinct. iodine, glycerine, and tannic acid. A good ordinary combination is as follows :

R. Tinct. Iodine,	.	.	.	.	.	.	℥ss.
Glycerine,	.	.	.	.	.	.	"
Tannic Acid, .	.	.	.	.	.	.	gr. xv.
Mix.							

Apply with a brush.

Black or Discolored Teeth.

Teeth discolored imply the death of the pulp and its absorption into the dentinal tubules. The removal of the stain is found by drilling into the pulp canal, washing it out thoroughly, and decolorizing by the careful application of chloride of lime. Chalk, if long enough persevered in, being changed every day, will frequently be found to answer the same end.

Replanting Teeth.

Teeth removed by accident will not unfrequently re-adhere to their sockets, even after being several hours out of the mouth. To reset them, it is only necessary to wash out the alveolus, and to hold them in place by ligatures. Cases are recorded where reunion was secured after a space of twelve hours. A nice preparatory treatment of the tooth con-

sists in drilling into the pulp canal, removing this organ, and supplying its place with gold, as in the ordinary operation of root-filling. This prevents, to a great extent, discoloration.

Epulis Tumors.

Tumors associated with the gums are of very various pathological character, and are to be well studied before resorting to deforming operations. Unless decidedly carcinomatous, complete resection of the bones will seldom be found necessary. Tumors of these parts are much more frequently fibrous and erectile in character than otherwise.

Trismus.

The most frequent cause of trismus in the young adult will be found in an erupting wisdom tooth. To cure it, remove this tooth, or, if this may not be done, take away the second molar. To perform this operation in the closed mouth, use an elevator, thrusting the tooth into the oral cavity.

Alveolar Abscess.

Periodontitis, tending to abscess, may very frequently be aborted by drilling through the alveolus into the extreme apex of the tooth-root. A periosteally inflamed tooth is to be protected by a cap of gutta percha placed over a neighboring tooth; this prevents the dental articulation.

Vulcanized Rubber for Capping Exposed Nerves.

Dr. J. R. WALKER, of New Orleans, in an article published in the November No. of the *Dental Register*, recommends vulcanized rubber caps over exposed nerves, and describes his method of applying them in the following case:

Having about two years since an unusually difficult case, in which the patient (a lady) was very desirous of having a pulp saved, and being satisfied that nothing which had been tried would prove equal to the occasion, it occurred to me that *vulcanized rubber* ought to answer the conditions better than anything that had been used.

The tooth was the right superior central incisor, cavity very large, in the labial surface, exposure large, but pulp healthy, and the patient ditto, temperament nervous sanguine. I took a piece of rubber plate, with one side finely polished, and after filing it to the proper thickness, cut out the cap in form to suit the cavity, then, with a fine file, dressed the edges thin, leaving it thick enough in the central portions to sustain the filling. Having the cavity well prepared, I placed the cap over the exposed pulp, and filled with gold.

Notwithstanding the size of the cavity, and its peculiarly exposed position to all thermal changes, the rubber being a non-conductor, and the thin and pliant edges giving it a thorough adaptation, proved so good a protection, that the patient has never felt any inconvenience, even in drinking ice water. Thus encouraged, I have tried it in, perhaps, fifty cases since, being careful that the pulp shall be always healthy, and although I have used it in each case with the understanding that it was an experiment, the patient promising to inform me of any want of success, I have not heard of a single failure.

As my experience in this method of saving pulps has been so exceedingly satisfactory, I offer the idea to the profession, hoping that by so doing I may enable others to *save more teeth alive*, and induce them to abandon the too common practice of murdering every dental pulp that has a slight exposure.

VETERINARY MEDICINE.

Rabies Canina.

The *Medical Times and Gazette* (quoted in the *New York Medical Journal*) refers to a recent publication on rabies canina, by M. ST. CYR, Professor of the Lyons Veterinary School, in which he arrives at the following conclusions: 1. That the duration of the period of incubation has no fixity, since in one hundred and fifty-nine dogs under observation it varied from sixteen to one hundred and fifteen days. The short periods of two or three days, often spoken of in rural districts, have no foundation in truth. 2. Another prejudice in regard to sex is also unfounded, since bitches are not less liable to rabies than the male dog. 3. Dogs are more liable to it in proportion to the wandering character of their lives. 4. It is absolutely untrue that hot and dry weather favors the occurrence of rabies, it being in reality found that cases are oftener met with during the rainy months. 5. No other cause of rabies is known at present than contagion, and could all mad dogs be killed at a single blow, the disease would entirely disappear.

In this connection, we may mention, that a case of rabies in man, induced without any bite, is recently reported in the *Annales de la Soc. Med. Chir. de Liège*, where the period of incubation was one year and six days. The subject, æt. 69, was scratched on the back of his hand by the claws of a dog, and to heal the wound he caused another dog to lick the injured part. Soon afterward this second dog was declared rabid and killed. The man was seized with unmistakable symptoms of hydrophobia at the time above mentioned, and died after an illness of two days. The period of incubation is certainly worth noticing. The absence of any bite is not extraordinary, for the denuded surface made by the claws of the first dog, afforded a favorable opportunity for the rapid absorption of the poisonous saliva from the second (rabid) dog.

On the same subject Dr. R. P. HUNT, of Chicago, in the *Chicago Medical Journal* of August, 1867, remarks:

Rabies is generally understood as hydrophobia, or the cause which induces it. Is there such a disease as hydrophobia? There evidently is. Is not the disease less common than is generally supposed? Is there not a ruthless war unnecessarily waged against the dog, man's fastest, firmest, and most steadfast friend? How many cases of hydrophobia are correctly, authentically reported? Is it not a well-known fact, that the wolf and wild dog generally jump at those portions of the body unprotected by clothing? The domestic dog snaps at the easiest and nearest place, necessarily through the clothing, and often through the boot, thus wiping off the poisonous saliva, and inserting a clean, unpoisoned fang.

Now, there is a popular theory that dogs suffering from hydrophobia, generally so called, fear water. This may be true; I do not gainsay it; but still, cases are reported, and that on high authority, where dogs pursued and persecuted, under the supposition that they were hydrophobic, have been known to spring into and swim large streams. Watson says, that the fear of water, and the difficulty of imbibing it, is not only a gross error, but one perfectly opposed to fact; not only does thirst exist, according to this author, but it is

unquenchable. Mr. Youatt, who, possibly, has more reputation in the veterinary line than any other man in the English language, says, that "all other quadrupeds, with the exception of the horse, drink with increased avidity." The great John Hunter, who is well known to every tyro in the profession as one of the fathers of modern surgery, is reported as saying, "that out of twenty-one cases bitten by dogs supposed to be laboring under hydrophobia, only one fell a victim to it." There are many cases of reputed rabies which are certainly not founded on facts. Now, are not the great majority of these cases, reported hydrophobic, simply hysteria.

We all know that hysteria is not, as its name asserts, specially peculiar to women, and that it is not a mere fancy, but a painful disease, and often incurable.

Syphilis in the Lower Animals.

The conclusions of M. AUZIAS TURENNE, on this subject, are contained in the *Archives Générales*. We quote them from the *New York Medical Journal*:

1. Certain of the lower animals, especially the monkey and the cat, can contract both primary and secondary syphilis.

2. The mucous membranes of these animals do not appear to be very favorable for the development of the syphilitic symptoms.

3. Nevertheless, the chancre and false chancre do develop on these mucous membranes.

4. I have seen on the lower lip of a cat a large, slow growing tubercle, which was three times reproduced in precisely the same spot, and which each time was ulcerated. At the time of each reappearance of this tubercle the cat was pregnant, and afterward gave birth to young which lived but a few days.

5. The primary symptoms in the monkey and the cat are the chancre and false chancre.

6. I am in doubt whether these animals are susceptible of contracting syphilitic blennorrhagia.

7. Twice I have found roseola,—once in the monkey and once in the cat.

8. Scattered eruptions of acne constitute a common and persistent symptom in the animals.

9. These eruptions present in the monkey, cat, and rabbit, the same characteristics as in man, with only this difference, that while in man they are confined to the scalp and certain hairy portions of the body, in animals they are generally distributed over the whole body.

10. Alopecia is an undoubted symptom of syphilis in the monkey and the cat.

11. Mucous patches and onyxia are unquestionable manifestations of syphilis in animals.

12. It is true that animals are subject to rheumatoid pains, for under the influence of syphilis they become very sensitive to cold, and sometimes the movements of their limbs are interfered with.

13. The hair-bulbs and the scalp become the seat of pain in animals in certain cases of syphilis.

14. Circumscribed acne, syphilitic vegetations, gummy tumors and tubercles of the skin, have frequently been observed in the cat.

15. This animal is subject to osteocopic pains and adenitis.

16. The cat, which is the subject of this paper, has a muscular tumor of a syphilitic nature.

17. Periostoses and also exostoses have been ascertained and proven in the cat.

18. A syphilitic cat, after giving birth to young infected with hereditary syphilis, becomes sterile.

19. From all these primitive and consecutive symptoms, we are able to say there is probably not a single one that will not spontaneously disappear. Each one has a beginning, a continuation, and a termination. This is not accidental, but a natural evolution which is accomplished. They are not arrested by treatment, but they yield spontaneously. The disease itself, in its various manifestations, has a beginning, a culmination, and an end.

Influenza in the Horse.

Mr. T. W. GAWINGS, V. S., of Camdentown, calls attention in a British exchange to the diagnosis and treatment of this often fatal complaint. He finds that especially a yellowness of the mucous membranes, best shown on the conjunctiva, or white of the eye, is very characteristic. Whenever the sign is seen, and sudden weakness remarked, caution should be practised, for it is ten to one that the pestilence is approaching. Influenza is a very simulative disorder; it has appeared as laminitis; disease of the lungs is, perhaps, its favorite type. Bowel complaints are apt to imitate each other; blowing generally commences such disorders. But when influenza is prevalent, let the body's strength and the yellowness or redness of the membranes be always looked to before any more prominent indication is particularly observed.

The other symptoms, which, however, are very uncertain, as regards any of them being present or absent, are pendulous head, short breath, inflamed membranes, swollen lips, dry mouth, enlarged eyelids, copious tears, sore throat, tucked-up flanks, compressed tail, filled legs, big joints, lameness, and hot feet. Auscultation may detect a grating sound at the chest; whenever this is audible, there is a copious nasal discharge. Sometimes, one foot is acutely painful, and, notwithstanding the weakness, the leg is held in the air. Purgation has been witnessed although constipation usually prevails, and the animal generally stands during the continuance of the disorder.

Move the horse slowly to a well-littered, loose box; mind the door does not open to the north or to the east. No food will be eaten; but suspend a pail of well-made gruel within easy reach of the animal's head. Let the gruel be changed, or the receptacle replenished at stated periods, thrice daily; sprinkle one scruple of calomel upon the tongue, and wash it down with a drink composed of sulphuric ether, one ounce; laudanum, one ounce; water, half a pint; do this night and morning. Should the weakness be excessive, double the quantity of ether and of laudanum contained in the draughts. Watch the pulse—it always is feeble, but at first has a wiry feeling. So soon as the character of the pulse changes, or the wiry sensation departs, which generally happens when the nasal discharge becomes copious and the cough appears, one pot of stout may be allowed and some nourishing food, as bread, on which a very little salt has been sprinkled, may be offered by hand. The horse feels man to be its master, and appreciates any attention bestowed upon it in the hour of sickness. It will stand still to be caressed and advance its hanging ears to catch the accents of sympathy.

Beware of what is termed active treatment; a purgative is death during influenza. It generally will induce the prostration from which the animal never recovers. Formerly it was common to see four strong men propping up a horse during its endeavor to walk. But the lower class are fond of joking one with another. Such was the usual result of their employment on these occasions. In the fun, the horse got but partial support, while the noise distressed the diseased sensibilities. Horses have large sympathies, and readily comprehend the attentions dictated by kindness. The disregard which people too often display toward sickness in an animal, acutely pains the creature: its effects may be told by the altered character of the pulse. Whereas, the voice when softened by pity, often causes the heavy head to be turned toward the speaker.

Pathology of Spavin.

Mr. J. GAMGEE, writing in the *Journal of Agriculture*, gives some new and rational views on the pathology of this complaint in horses. He remarks :

I found that the seat of pain and the first part affected was remote from the so-called spavin, or "seat of spavin," which had monopolized all attention. The front, and not the inner side and backward part of the hock-joint, is the seat of the injury and consequent disease. The articulating surface of the cannon bone, and that of the cuneiform bone which reposes on it, is, I believe, always the first part affected; following immediately, if not simultaneously occurring, is injury to that division of the joint between the lower and uppermost of the two cuneiform bones, and from the lining membrane to the cartilage covering these articulating surfaces becoming inflamed, the substance of the bone itself undergoes change of condition; to inflammation and ulceration succeeds ossification, deposition of new bone,—nature's process of strengthening parts,—filling up breaches, and limiting the motion between one bone and another, where the condition of these surfaces is unable to endure the friction which motion with pressure would cause. Here, then, we find all the phenomena of the most painful case of spavin; the ossification meanwhile being extended mostly around the inner side of the joint and backward where the enlargement appears, while in front the original and real seat of disease, and first part injured, is not observable in the living horse, because the bones in natural position recede, and their articulating margins lie in a concavity under a cushion of cellular substance, ligament and large tendons passing over, so that the condition of parts is obscured from all but thorough investigations into the phenomena after the death of the animal affected.

When, however, the ossification has by a more or less rapid process extended, involving the head of the small metatarsal bone, the naturally prominent part increasing forms its normal prominence called "spavin," to treat which as the disease, is like attacking the spur on a man's boot for pain caused by sprain of the ankle.

In proceeding to gain acquaintance of the conditions and causes of spavin, we must become familiar with the action of the hind limb of the horse, and the exertion it undergoes in progression. The whole limb is to be regarded as a most perfect system of leverage, and, inspected analytically, it may be seen that from the point of the hock,—os calcis, or heel-bone,—to the bottom and point of the foot, that region comprises a lever endowed with distinct action. Thus at each successive time a hind foot is lifted, according to the power exerted, it is extended under the body, and the shaft, composed of the digital, metatarsal, and tarsal regions, taken altogether, acts in an oblique direction from above downward and forward; when the foot is implanted, this being the point of resistance of the shaft and the upper extremity of the os calcis, on to which muscular power acts, raising the shaft from its oblique to a vertical line, produces action. The axis or fulcrum of the lever is the head of the cannon bone anteriorly, and the lower and upper cuneiform bones, which interpose between that shaft and the "key-bone of the hock," the astragalus.

If we look at this lever-power of the horse's hind limb under other aspects,—taking, firstly, the case of a horse under heavy draught,—the action as just described will be apparent; the greater the weight, and therefore the slower the pace, the easier the solution of the question. Taking as another instance, that of a horse galloping at full speed, where the hind feet are extended farther under the body, and where the obliquity of the position of this lever will be increased in proportion to the rate of speed at which the animal is going, the action being rapidly repeated, the leverage will be equally apparent, and in all respects the pressure under excessive weight and force will be seen to occur as described.

SUPPLEMENT.

[THE FOLLOWING ARTICLES WERE RECEIVED TOO LATE FOR PROPER CLASSIFICATION.]

MISCELLANEOUS.

HEART DISEASE.

Remarks on Heart Disease, as observed in the Military Service from 1861 to 1865 inclusive,

By M. K. TAYLOR, M.D., Professor of Physiology and Pathology in the Medical Department of Iowa, &c., published in the Transactions of the American Medical Association,

ARE based upon the author's experience while in the service of the United States. He details two typical cases selected among many, presenting structural changes in the *right ventricle*, by dilatation of its walls. This class of cases are, in Dr. TAYLOR's opinion, frequently overlooked, and the symptoms during life ascribed to functional disorders. In studying these cases,—thinning and dilatation of the walls of the right ventricle, with the left side of the organ remaining normal, or nearly so,—the author came to the following conclusions:

1st. There had been some impediment to the free circulation of the blood through the lungs at no very remote period.

2d. This impediment arose from very different conditions,—one being mechanical obstructions dependent on consolidations of the lung-substance, as in pneumonia, or by compression, as in pleuritic effusions; and the other dependent on functional derangements of the respiratory action, as in bronchitis, where the introduction of air is more or less interfered with by thickening of the bronchial membranes, or the presence of tenacious mucus; or, on the other hand, from external compression of the thoracic walls by the belts, uniform, and weights borne upon the back and shoulders, thereby preventing the proper aeration of the blood, and with that an arrest of its capillary circulation.

3d. The depressed condition of the muscular structure of the heart was shown by its feeble action, but further corroborated by the loss of muscular tone throughout the entire system, and which we always find in scorbutic and chronic malarial conditions.

4th. In morbid states of the circulating fluid.

5th. In sudden and undue burdens imposed on the heart during rapid marches, or the overwhelming fatigues and excitements of the battle. Many of the patients stated explicitly that the first evidence they had of any ailment in this direction, was immediately after such excitements.

The frequency of the occurrence of these cases is approximately determined by the fol-

lowing statistics, derived from the author's notes : Of 2275 discharged from the service on his certificate, 1366 were medical cases, and of these latter, 152, or 12½ per cent., were diseases of the heart. These are classified as follows :

Involving tricuspid valves, with dilatation of right ventricle, 24 ; involving tricuspid valves, without dilatation being fully determinable, 37 ; dilatation, without valvular disease, 16 ; total of right side, 77.

Involving mitral valves, with dilatation of left ventricle, 12 ; uncomplicated mitral valvular disease, 13 ; involving semilunar valves of aorta, 7 ; hypertrophy of left ventricle, without specification as to valvular disease, 26 ; total of left side, 58. Pericarditis, 5 ; functional disorder, 7 ; doubtful (muscular debility and anæmia), 5.

Of 61 cases of disease of the heart transferred to the Veteran Reserve Corps, 22 were of the right side ; tricuspid valvular disease, with dilatation, 8 ; the same without dilatation, 1 ; simple dilatation of right ventricle, 13.

In a dozen or more fatal cases the diagnosis was verified by the autopsy. Death in nearly all of them was sudden when occurring in the hospital, and under circumstances that indicated an enfeebled and exhausted condition of the organ. In some there was a textural change of a fatty character. In all the heart was very pale and flabby, and showed little or no signs of rigor mortis. A large majority of the patients regained a fair degree of health. Some have become very robust, and show scarcely a trace of their former trouble. This is especially the case with the younger class of patients ; those past middle life exhibited little, if any, change for the better.

As to the signs and symptoms distinctive of these conditions of the right side of the heart, the usual symptoms presented, such as feebleness of impulse, irregularity of rhythm, intermitting often, occasional *bruit*, constant exaggeration of normal circulatory sounds, diminished impulse at apex, decided increase at the inter-cartilaginous spaces of the sixth and seventh ribs, near the left margin of the sternum, and frequently extending beneath the free margin of the cartilages common to the lower ribs of the left side, increase of transverse diameter, and occasional sharp, lancinating pains in the præcordia, a sense of suffocation in lying down, or on exercising, venous pulsations of the external jugulars in about one-half the cases, engorgements of the liver in about the same ratio. A few had albuminous urine, but in all this fluid was heavily loaded with the urates, with a specific gravity averaging 10.20, lividity of lips and extremities, flushed face, and in some cases a decided glow over the entire surface of the chest, readily disappearing under moderate pressure, but returning slowly. The integument presented the appearance of passive congestion.

The treatment was of course predicated upon the history and condition of each individual case. One general indication existed in all, namely, to restore the tone of the muscular structures by well-regulated exercise and diet, employing also the ferruginous and bitter tonics. Nourishing food in moderate quantity, with daily changes in its kind and mode of preparation ; light exercise and exposure to the fresh air and sunlight was imperative. To allow these patients to remain idle was quite as objectionable as to require undue labor of them. The author is convinced that by this means many individuals recovered a good degree of health, who, had they been discharged the service and been unrestrained in the gratification of their appetites, &c., with the functions of the heart liable to be overtaxed by indiscretions, would have died prematurely. A demonstration of this was seen in several patients furloughed, where, after an absence of a month or longer, they returned worse than when they left the hospital.

HISTORY AND LITERATURE OF MEDICINE.

Report upon the Rank of the Naval Medical Staff.

By W. M. WOOD, M.D.

This report lucidly exposes the unjust position into which medical officers are legislated in our navy, and should be brought to the attention of Congress.—*Transactions Amer. Med. Association.*

Report on American Medical Necrology,

By CHRISTOPHER C. COX, M.D., of Maryland,

Contains nearly one hundred necrological notices and biographical sketches of eminent medical men deceased during the year 1866.—*Transactions Amer. Med. Association.*

Report of the Committee on Medical Education.

By S. D. GROSS, M.D., of Pennsylvania.

The progressive views of Professor Gross, on medical education, are so well known that it is only necessary to enumerate the main points of this report as to the requirements of sound medical education :

- 1st. A proper physical and moral condition of the student.
- 2d. A sound preliminary education.
- 3d. Extension of the term of pupilage to four years, and attendance upon not less than three full courses of lectures, and devotion of not less than two years of clinical instruction within the wards of a well-regulated hospital. Private pupilage, as it is now generally conducted, is worse than useless.
- 4th. Extension of the lecture-term, diminution of the number of daily lectures, more dissections and practical chemistry, more thorough system of oral examinations, all schools to be connected with a well-organized hospital.
- 5th. Extension and modification of the curriculum of instruction. Introduction of pathological anatomy, toxicology, medical jurisprudence, medical ethics and medical history as distinct branches.
- 6th. Demonstrators of surgery, midwifery, and chemistry to be appointed.
- 7th. Summer course of instruction for special branches.
- 8th. Morbid anatomy to be particularly introduced into the curriculum.

Report on Medical Literature.

Prof. POST, in his report to the American Medical Association on Medical Literature, gives a list of medical works published in the United States, in 1866. The number of medical Journals was thirty. A large number of the works issued were reprints.

Large Primary Uric Acid Calculus.

Prof. HELLER exhibited at the July meeting of the Royal Imperial Society of Physicians of Vienna (*Wiener Med. Wochenschrift*, July 13th, 1867), a uric acid calculus of considerable size, removed by the high operation. It is remarkable, in that it consists almost entirely of uric acid and its salts, only an extremely thin external layer being composed of ammoniacal salts.

As experience has taught us that only a very moderate amount of cystitis suffices to produce an abundant deposit of secondary ammoniacal salts upon the surface of concretions, this specimen would seem to prove, that large calculi may exist in the bladder, without producing enough irritation of the mucous membrane to result in cystitis.

The Treatment of Whooping Cough by Inhalation of Nebulized Liquids.

Dr. HELMKE, of Jena, reports his experiments with bromide of potassium, against the spasmodic paroxysms in the so-called second stage of whooping cough (*Jen. Zeitschr. für Med. und Naturw.*, iii, p. 309, 1867).

He used a solution of gr. ij to the ounce of distilled water, and at each sitting from 1½ to 2 ounces of this solution was nebulized and inhaled for about eight minutes on the average. His patients were twenty-three children, varying in age from 1½ to 11 years, all at the beginning of the spasmodic stage, and having from ten to twenty severe paroxysms daily. His results are expressed as follows: 1. Bromide of potassium thus employed acts as an anæsthetic upon the mucous membrane of the pharynx, larynx and trachea. 2. It acts slightly as an astringent, and diminishes the toughness of the mucus; the duration and intensity of the individual paroxysm is by its use lessened. 3. Corresponding to the dietetic conditions and the violence of the anatomical lesions, the cure takes from eight days to three weeks.

[In this connection the present writer desires to add a few words, to urge upon all practitioners the use of some nebulized liquid, or else local application, to touch the mucous membrane of the lower cavity of the larynx, *i. e.*, below the vocal cords, and anteriorly the upper part of the trachea, which the laryngoscope has in very many cases of whooping cough shown to be the main part affected. A very weak solution of nitrate of silver nebulized by an appropriate nebulizer and inhaled, will be found very frequently to give surprisingly gratifying results. Very small children, who will not voluntarily inhale, should have the fluid directed into their open mouths.]

A Case of Purulent Pleurisy with Croupous Pneumonia.

Dr. HERVIEUX, of Paris (*L'Union*, No. 56, 1867), relates the case of a newborn infant which ceased nursing on the sixth day, constantly moaned, and visibly fell away. On the seventh day it became half comatose, face cyanotic, abdomen tympanitic; no cough. The case was diagnosed and treated as one of peritonitis. On the eighth day before-mentioned symptoms became still worse, respiration 44, pulse 140, very feeble. Percussion showed on the right side of the thorax, both anteriorly and posteriorly, a well-marked dulness; auscultation, plain vesicular murmur same place. Death occurred in the evening. The autopsy showed considerable protrusion of the right half of the thorax; after puncture a quantity of liquid, at first clear, yellow, afterward turbid, purulent. The right lung was found pressed back to the vertebral column; the pleura covered with thick layers of a yellowish-white pseudo-membrane. The parenchyma of the lung, upper portions exquisitely gray hepatized, lower portions more atelectatic. The liver and pancreas enlarged and hyperæmic.

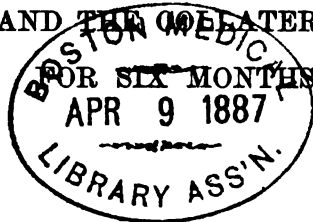
Hervieux sees in these changes in the lung a new form of pneumonia, to which he gives the name "hypopleuritis." Microscopical examination showed him that only the outer layers of the lung-tissue were affected with croupous inflammation, the deep layers being only in the fetal state, so that he argues the pneumonia must have been caused by continuity from the inflammation of the pleura.

HALF-YEARLY COMPENDIUM
OF
MEDICAL SCIENCE:

A SYNOPSIS

OF

THE AMERICAN AND FOREIGN LITERATURE OF MEDICINE,
SURGERY, AND THE COLLETERAL SCIENCES,



EDITED BY

S. W. BUTLER, M.D., AND D. G. BRINTON, M.D.

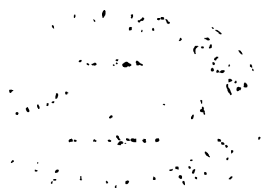
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PHILADELPHIA:

S. W. BUTLER, M.D., 115 SOUTH SEVENTH STREET.

1868.



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P R E F A C E.

IN January last was sent out the initial number of this enterprise, which proposed to fill a void in the medical literature of the English language by giving semi-annually an abstract of the current medical periodical literature of the world—not simply that of a few journals. It was intended that the enterprise should be one of great *practical* advantage to the medical reader, and challenge the general support of the profession. The work was *well received*, both by the medical press and the profession.

The second number is now before the public. It has been delayed a month by accidents incident to the inception of a new enterprise. There were delays in getting the machinery of our foreign exchanges into smooth working order. Then we committed the error of providing a superabundance of material, necessitating a revision of a large portion of the work after it had been put into the hands of the printer and a part of it was in type, and the rejection of much valuable matter. Even then, it was necessary to add about fifty pages extra to the number.

We shall, however, learn by the experience thus acquired, and expect hereafter to make a closer calculation as to quantity of matter, and its arrangement, while our collaborators will endeavor to condense more, and thus enable us to give a still more perfect abstract of the medical literature of the day.

This number will be found to be an improvement on its predecessor. It contains much more matter, and is far more extended in its scope, and systematic in its arrangement, and is supplied with a full table of contents. It contains about FOUR HUNDRED AND TWENTY separate articles, from the pens of ONE HUNDRED AND NINETY-ONE American, and TWO HUNDRED AND TWELVE Foreign authors. This fact of itself attests the value of the work.

The work has been prepared by practical men, many of them well-known writers—viz., CH. F. J. LEHLBACH (*Anatomy and Physiology*, and contributions to other departments); W. LEHMAN WELLS (*Pathology*, and contributions to other departments); R. E. VAN GIESEN (*Physics, Botany, Chemistry, and Toxicology*); H. M. LYONS (*Materia Medica and Therapeutics*); D. G. BRINTON

(*General Medicine, Veterinary Medicine, and contributions to other departments*); GEORGE H. NAPHEYS (*Clinical Medicine*); S. W. BUTLER (*Obstetrics and Diseases of Women and Children*); SAMUEL W. GROSS, PHILIP S. WALES, U.S.N., and R. R. TAYLOR (*Surgery, and contributions by Dr. TAYLOR to other departments*); D. B. ST. JOHN ROOSA (*Eye and Ear*); L. ELSEBERG (*Nose, Mouth, and Throat*); F. F. MAURY (*Diseases of the Skin—Gonorrhœa and Syphilis*); JAMES E. GARRETSON (*Dentistry*).

In conclusion we repeat the request that all members of the profession who publish monographs, all Secretaries of Medical Societies and Editors of Medical periodicals, should send copies of their various publications to the COMPENDIUM that they may be used in the preparation of the work.

S. W. BUTLER, M.D.,
D. G. BRINTON, M.D.,
Editors.

PHILADELPHIA, July, 1868.

*** *Plan of paging the COMPENDIUM.*—It will be observed that each department of the COMPENDIUM is paged separately, so that after a few years the work can be broken up and bound into volumes on each department. The running page of the number is at the bottom of the page.

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THE METRIC SYSTEM OF MEASURES OF LENGTH, CAPACITY, AND WEIGHT.

As the Decimal or Metrical system of measurement is likely soon to be adopted as our national standard, a synopsis of it as compared with that now in general use, is presented below.

The unit of the decimal or metrical system of measure of length is the metre (39.371 inch), and is intended to be the ten millionth part of the distance from the Equator to the North Pole.

The unit of the measure of capacity is the litre (2.1135 pints), and is obtained by taking the cube of one-tenth of a metre (*i. e.*, of a decimetre).

The unit of weight is the gramme (15.434 grains), and is obtained by taking one-thousandth part of the weight of water (at 39.2 F.) contained in the litre (cubic decimetre).

The decimal subdivisions of the metre, litre, and gramme are expressed by the Latin prefixes, deci, centi, milli, etc.; while the decimal multiples are expressed by the Greek prefixes, deca, hecto, kilo, etc.

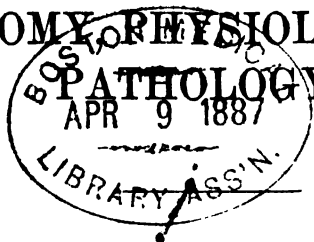
NEW FRENCH MEASURES OF LENGTH.

Millimetre	=	0.039	English inches.
Centimetre	=	0.393	“ “
Decimetre	=	3.937	“ “
Metre	=	39.371	“ “ = 1 yd. 0 ft. 3.37 in.

TABLE OF THE DECIMAL OR METRICAL WEIGHTS COMPARED WITH
AVOIRDUPØIS AND APOTHECARY WEIGHTS.

NAMES.	Equivalent in Grammes.	Equivalent in Grains.	Equivalent in Avoirdupois weight.	Equivalent in Apothecaries' weight.
Milligramme .	.001	.0154	lb oz. gr.	lb ʒ 3 gr.
Centigramme .	.01	.1543		.1
Decigramme . .	.1	1.5434		1.5
Gramme . . .	1.	15.4340		15.4
Decagramme . .	10.	154.3402	0½ 45.	2 34.
Hectogramme .	100.	1543.4023	3½ 12.152	3 1 43.
Kilogramme . .	1000.	15434.0234	2 3½ 12.173	2 8 1 14.
Myriagramme .	10000.	154340.2344	22 0½ 12.	26 9 4 20.

ANATOMY, PHYSIOLOGY, AND PATHOLOGY.



I. ANATOMY.

Epithelium of the Bloodvessels.

IN the *Journal de l'Anatomie et de Physiologie*, for May and June, 1868, published by M. Chas. Robin, there is an article on the epithelium of the bloodvessels by M. CH. LÉGEROS, member of the Société de Biologie. He made a great many observations, using for his injections a solution of gelatine with 1 part nitrate of silver to 400. This reveals the epithelium, by coagulating and darkening the substance of the cells; it has, however, the unfortunate effect of hiding the nuclei.

To prove that there was not merely an appearance of cells, caused by segmentation of a homogeneous substance, through drying or coagulation, the attempt was made to produce this effect on thin layers of gelatine and collodion, but unsuccessfully.

The epithelium is very similar to that which covers the endo- and pericardium. It is of the pavement-form, and there is only one layer, new cells forming between old ones.

A few hours after death it becomes detached; experiments, therefore, have to be made on animals just dead, or on amputated limbs. In the case of the placenta, this early examination is especially important.

The cells are lozenge-shaped; in the arteries much elongated; in the veins not nearly so much so. The long diameter is always in the direction of the axis of the vessel; the difference between the arteries and the veins not being due only to the elasticity of the artery, no longer stretched by the blood, for it is seen even when a preparation is made where the artery is stretched artificially; and tension of the vein, in the direction of its axis, will not lengthen out the cells to the size of those of the arteries.

In the larger capillaries, in the arterial sinuses, and in the erectile tissue, the cells are similar to those of the veins. In the finer capillaries they are of various shapes. Sometimes one will form a complete ring; sometimes a spiral will be the shape; but, whatever the form, almost always the long diameter is in the direction of the current.

The largest-sized cells were found in the batrachians. In the Triton, in an artery of the lungs, a cell was measured $\frac{1}{10}$ millimetre long; the diameter being $\frac{1}{4}$ th of the length. The smallest measurement made was of the diameter of one found in an arteriole of the thyroid body of the rat,— $\frac{1}{80}$ th of a millimetre. The length

of this cell was ten times its breadth. In man the size is a little greater than in the rat.

The larger the bloodvessel the larger the cell, and in general very nearly related in organization. The size of the cell is proportionate to that of the animal, to a certain extent. Age has no effect. The cells are as large in the embryo as in the adult.

The vena portæ has an epithelium less elongated than that of the arteries, but more so than that of the veins.

M. Legros draws from his experiments the following arguments to prove the existence of an amorphous membrane in the capillaries: 1st, That an injection made several hours after death, causes only a uniform color, and no segmentation; the epithelium having been carried away, leaving only the basement-membrane: and, 2d, That soaking the tissues in a solution of nitrate of silver, never shows the epithelial cells, which it would do if there were nothing forming the capillaries but these cells; that is, no membrane impermeable to the solution. A third reason, of course, is, that these thin pavement-cells, alone, would be incapable of resisting the pressure of the blood in such tissues as the brain, retina, etc.

The lymphatic ducts have no nuclei in their epithelial cells; at least M. Legros attempted in vain to demonstrate them by the use of various coloring matters. These cells are also more irregular, and less symmetrical, than those of the blood-vessels.

To determine whether every cell in the bloodvessels has a nucleus, M. Legros injected one vessel with nitrate of silver, and another, of the same calibre, with carmine; and on pieces of the same size, he found more cells on the one which had been injected with nitrate of silver, than he found nuclei on the one which had been injected with carmine. Of course, he regards this observation as only suggestive.

Nervi Nervorum.

At a meeting of the French Academy of Sciences (Nov. 4th, 1867), M. ROBIN announced, for M. Sappey, some observations upon the nerves of the neurilemma, or *nervi nervorum*, with the following conclusions:

(1.) The neurilemma receives nervous filaments, which are to the nerves what the *vasa vasorum* are to the bloodvessels.

(2.) Their existence is constant, and readily demonstrable.

(3.) The anatomical disposition of the *nervi nervorum*, in the neurilemma, differs little, on the whole, from that of nervous ramifications in other tissues of the fibrous system.

(4.) They are not only found upon the common sheath, but also in the neurilemma of the main fasciculi, and of the tertiary bundles. M. Sappey has succeeded in tracing them even upon the sheath of the secondary nerve-bundles. But as the calibre of the sheaths diminishes, they become more rare. They are never seen to extend to the envelope of the primary nerve-bundles.

(5.) The absence of the *nervi nervorum* upon the neurilemma of the primary bundles, explains why they are wanting in all divisions of the nerves, the diameter of which does not reach 1 millimetre.

(6.) The internal or deep envelope of the optic nerve, receives no nervous branches. But its external envelope shows a large number, which have their origin in the ciliary nerves.

(7.) The external sheath, or neurilemma, of the optic nerves, so well supplied with *nervi nervorum*, is also distinguished by an abundance of elastic fibres, entering into its composition. It is, hence, an error, to consider it, as has been done, as a link of connection between the dura mater and the sclerotic. It differs from them notably: (1) by its elastic fibres, which are absent in both; (2) by the existence of *nervi nervorum*, which are of extreme rarity in the cranial dura mater, and no trace of which is observed in the sclerotic. Anatomical analysis, far from confirming the analogy which so many anatomists have believed themselves justified in assuming, shows, on the contrary, that it is distinguished from these two membranes, with which it is blended, by characteristic peculiarities.

Termination of the Nerves of the Bladder.

In the *Centralblatt für die medicinischen Wissenschaften*, for May 16th, 1868, are published the results arrived at from a series of examinations made on the bladder by JOHN KISSELEW, student of medicine in the University of Charkow, under the guidance of Professor CHRZONSZCZEWSKY.

They came to the conclusion that the nerves of the submucous tissue send off small branches, or, more frequently, individual filaments, which pass through the mucous tissue in various directions and end in *pear-shaped nucleated structures*, either directly or after first forming a network.

These pear-shaped bodies are shown not to be epithelial cells, by being more deeply colored by carmine; and by the fact of their clinging more firmly to the underlying tissues when the preparation is brushed before examination.

They are shown to be of nervous nature by being colored in common with the nerve filaments dark brown or black by the terchloride of gold, while the cellular tissue and the epithelial cells are not colored at all; and also by isolated preparations, by which their actual connection with the axis-cylinder of nerves can be demonstrated.

The axis-cylinder often was found to fork, before uniting with this terminal apparatus. The nerve coverings had almost always disappeared before reaching the epithelial layer.

Perivascular Lymphatic Canal System of the Vitreous Humor.

A. IWANOFF, of Vienna, publishes an article in the *Centralblatt für die medicinischen Wissenschaften* of Berlin, February 22d, 1868, in which after giving credit to His and others for the discovery that the lymphatics of the brain, of Peyer's glands, of the thymus, etc., form canals which completely inclose the smaller blood-vessels, he claims to have discovered the same thing in the vitreous humor of the frog.

He made the following observations:

1st. If cinnabar, chrome yellow, or the iodide of mercury be injected into the lymph-sack of a frog, it can be detected by the ophthalmoscope in the vessels of the hyaloid in from 1½ to 3 minutes after the injection, cinnabar being the slowest in making its appearance. The particles pass like sparks, rapidly along in the current.

2d. If cinnabar be injected repeatedly, at intervals of four or five days, for a month, it will be deposited in the walls of the perivascular canal; so that what was

formerly called adventitia capillaris, can thus be demonstrated to be a tube surrounding the capillaries. By a series of observations, made both with cinnabar, and with finely powdered graphite, the author detected ramifications of this canal, connecting different vessels; indeed a complete lacework, ramifying even into the substance of the vitreous humor itself.

When inflammation is artificially produced in a hyaloid membrane thus colored, the formation of new vessels may be seen always to take place at a point where an offshoot of the lymph-canal already exists. A funnel-shaped projection of the capillary wall first forms, and this gradually lengthens until another vessel or another projection from a vessel is reached.

Aqueduct of the Vestibule, an Open Canal.

Professor A. BÄTTCHER, of Dorpat, contributes an article on this subject to the *Centralblatt für die medicinischen Wissenschaften* for May 2d, 1868, in which he says that he has discovered that this canal, already known to be open to the dura mater in foetal life, is so also in the adult; and in addition to this that it divides near the vestibule into two parts, one of which opens into one cavity and the other into the other cavity of the membranous vestibule, viz., the sacculus ellipticus and the sacculus rotundus. As the sacculus rotundus is connected with the cochlea by the canalis reunicus of Hensen, we have therefore all the parts of the labyrinth united, as in the embryo.

The wall of the aqueductus vestibuli of the adult cat is covered with an epithelial layer, which only differs from the stria vascularis of the cochlea, by being thickly set with clusters of capillary loops, which indeed exist in the eagle in the stria vascularis also.

Osteological Homologies.

The *British Medical Journal* of March 28th, 1868, has an article on English Comparative Anatomy, in reference to a new work by W. K. PARKER, M.R.C.S., on the Shoulder-girdle and Breast-bone, just published by the Ray Society. It says:

"Among the more interesting results at which Mr. Parker arrives, we may mention that he establishes the true nature of those bones of the scapular arch of fishes which have given rise to so many discordant interpretations. What Cuvier termed the 'humerus,' and Owen the 'coracoid,' turns out to be the clavicle. What Cuvier terms the radius, and Owen the ulna, proves to be the scapula; and Cuvier's ulna and Owen's radius is the coracoid. The bones which have been called carpal ossicles, Mr. Parker regards as rather representing the proximal than the distal elements of the limb of higher animals, and calls them 'brachials.' In the frogs and toads, he considers that part which has so often been called the clavicle as a precoracoid, answering, as it does, to a bone which exists behind the clavicle in Saurians. In his interpretation of the plastron (a ventral shield) of turtles and tortoises, Mr. Parker was anticipated by Rathke; but he independently discovered its essentially dermal structure, no part whatever of the true sternum entering into its composition."

These results have been arrived at in great measure by the study of the exact mode in which ossification arises in the various bones.

II. PHYSIOLOGY.

Excretion of Nitrogen from the Body.

The mode of removal, from the body, of the nitrogen of albuminous substances undergoing retrograde tissue metamorphosis, has, since the publication of the labors of BISCHOFF and VOIT, been generally understood to be definitely settled by the law that urea constitutes the measure of metamorphosis of nitrogenized substances, and that all the nitrogen to be eliminated, is solely removed through the channels of the urine and fæces.

This view is opposed by Professor J. SEEGEN, of Vienna, in a series of articles recently published in the *Wiener Med. Wochenschr.* His objections are based upon carefully conducted observations on dogs, for a period of 98 days, during which the amount of nitrogen introduced into the body, the changes in weight of the animals at different times, the amount of nitrogen excreted through the urine and fæces, were accurately determined. The main result was, a very considerable excess of the nitrogen introduced with the food, over that removed through the urine and fæces. According to the views of Voit, therefore, this excess should have corresponded to a proportionate increase of the weight of the animal. This, however, had not taken place; on the contrary the animals had lost in weight. The objection could be raised that the loss in the weight might have been due alone to loss of nonazotized substances, but this objection is fairly met by a detailed computation, which leaves no doubt that there was an ultimate deficiency, which can be explained in no other way than by assuming that a certain amount of nitrogen had been removed from the animal body through some other channel than the kidneys or bowels.

Professor Seegen, from these observations, also réaffirms the fact that carbonate of soda, introduced with the food or drink of the animal, increases the amount of nitrogen excreted by the kidneys, while it is considerably diminished under the use of Glauber salt. How this effect is brought about, our present knowledge fails entirely to explain. The author draws the following conclusions from his observations:

(1.) The nitrogenized products of tissue metamorphosis are not solely excreted through the fæces and urine. There exist for them also other channels of escape, and probably a part of the effete nitrogen leaves the body through the lungs and the skin.

(2.) Under various, not yet determined, influences, the excretion of the metamorphosed nitrogenous elements, through the urine, is the prevailing mode, while under other influences a large portion, and even one-half, leave the body through other channels.

(3.) Carbonate of soda seems essentially to increase the excretion of the nitrogenous products of tissue metamorphosis, through the kidneys, in the form of urea.

(4.) We are not justified in considering every deficiency between the introduction of nitrogen, and its excretion through the fæces and urine, as a saving of nitrogen to the body, and to compute it as a gain of muscular tissue.

The author adds a résumé of the experiments of Bidder and Schmidt, Hoppe, Henneberg and Stohman, Ranke, Boussingault, Barral and Reiset, and deduces from them facts in support of his own views.

The Influence of Cold upon the Animal Organism

has been made the subject of a series of experiments on animals by Dr. B. Beck, of Freiburg, the details and results of which are published in the *Deutsche Klinik* (February, 1868). Omitting the details of these observations, we give some of the most important points of the résumé.

I. When the extremity of an animal is subjected to cold, by packing it in ice for a period of one, two, or three hours, local and general disturbances are observed. The latter consist in rigors, increased respiratory movements and cardiac action; the results of efforts of the animal to increase its proper caloric. Subsequently a diminution in the energy of the respiratory and circulatory organs, with a diminution of the temperature of the body. On an average, the thermometer falls 3° C., in the course of three or four hours,—only after the lapse of six hours, this diminution becomes more marked.

Locally, the irritating influence of cold causes contraction of the vessels, diminished influx of blood to the part exposed, accumulation of blood in the veins, their dilatation, and finally stasis. This is followed by effusions and extravasations into the cellular tissue, in consequence of ruptures of bloodvessels, especially in the deeper-seated parts, which become overloaded by the stasis in the more exposed parts; hence extensive extravasations in the muscles are frequently found.

These disturbances of the circulation do not result in an essential alteration of nutrition in the tissues. When the noxious influence is removed, the circulation after some time is restored, and aside from deposits of blood-cells, occasional thickening of the connective tissue, the microscope shows no changes in the structure of the tissues,—no retrograde disorganization of the cell-elements.

The nerves at first become irritated; their sensory fibres become more sensitive. Afterwards they temporarily lose the power of conduction; which soon, however, is restored; and even in long-continued, intense action of cold, no change can be observed in their microscopic structure.

After the first increase of sensibility, the sensory power of the cutaneous nerves gradually ceases. This loss of sensibility extends to the deeper-seated parts, whose activity is disturbed and suspended. In man, after parts have been frozen, even when the nervous conductibility has been restored, various abnormal sensations remain, for a longer or shorter period,—sometimes for life,—influenced by changes of temperature.

The muscular tissue does not materially suffer under these conditions. Its structure remains unaltered, and its contractility is not diminished.

II. Different phenomena, however, are observed when the application of cold has been continued for a longer period: say seven to fifteen hours. In consequence of the contraction of the vessels, a less amount of blood than normally, enters the part subjected to the influence of cold, and this condition is increased with the continuance of the experiment, giving rise to local anæmia. The blood, returning to the body, collecting in the veins, flows in a slower current. The veins become distended. In consequence of the stasis, serum, with white corpuscles, is effused from the veins in increasing quantity; ruptures take place, and give rise to extravasations of various degrees; hence the swelling of the parts. A complete occlusion of the vessels, a suspension of the circulation, a freezing of the blood in the vascular tubes, could never be observed. In all cases, the vascular current, however slow, could be noticed plainly.

As is well known, blood only freezes at 3° below zero (C.), and it is impossible during life to cause this degree of cold of the blood, in the part affected, while new currents of warmer blood continue to enter it. With the exception, therefore, when the exposed part is very peripheral, supplied by very small vessels, and an artery of small calibre, superficially situated, becomes occluded by coagulation of the blood, complete congelation of this fluid will not take place, because the total organism will sooner suffer to a degree causing death.

No marked changes in the histological elements of the blood, taken from parts subjected to cold, could be found. Occasional shrinking of cells, their close adherence, and showing a tendency to diffuency under pressure (as frequently seen in ordinary microscopic examinations), excepted, their condition was normal. There was no disintegration, no separation of the ring from the nucleus, no segmentation of the cells.

The circulation in the parts never having been completely suspended, aside from a parchment-like dryness of such parts of the cuticle upon which the ice was laid thickly, and in the vessels of which the blood was coagulated, no complete death of the tissues, no mummification, no gangrene, could be observed. Disturbances of nutrition, of a remarkable nature, were observed only in the muscles, and consisted in the disintegration of the finer elements of the primitive fasciculi. The structure of the nerves was not changed, and generally gained their power of conduction some time after the experiment.

The influence of cold upon the system increased, of course, in proportion to the duration of its action. The diminution of the temperature of the body during the first hours of enveloping the limb in ice, was only two to three degrees. After a few hours it became more considerable. The thermometer fell, in respective cases, from 33 to 31 , 29 , 27 , 25° C., and even to 18 and 17° C. When it stood under 24° C., the animal was lost, unless removed from the ice. Under 17° C., at which temperature death ensued, the author never observed the thermometer to fall. The other general phenomena conform to this condition of temperature. The rigors increase in frequency and violence; pass frequently into convulsions; the animal makes strenuous efforts to liberate itself; respiration, at first accelerated, becomes slower; finally, hardly perceptible: pulse weaker; a tendency to sleep supervenes; the animal tumbles over; sinks into complete lethargy; voluntary and reflex motions are nearly suspended, and death occurs as the result of paralysis of the nerve-centres.

III. The proper cause of death, by cold, does not lie in a primary, essential, material disturbance of the nerve-centres; but, secondarily, in the absence of the stimulating, vivifying influence of the blood upon these centres. Pathological changes of importance cannot be observed after death in the brain or nerves, and during life we notice that somnolency, lethargy, weakening of the nervous centres, keep even step with the increasing venosity of the blood.

The cause of the noxious effect of cold, the destruction of life, is due alone to the change in the blood. Cold, aside from the local disturbances of circulation, causes, through irritation of the sensory nerves, the sensation of chilliness, with, at the same time, increased activity of the vaso-motory nerves of the cutaneous surface. The cutaneous vessels are thereby contracted, their supply of blood is diminished, the function of the skin,—perspiration,—is changed, even suspended. The exhalation of carbonic acid, nitrogen, water, and the absorption of oxygen through the skin, ceasing, the decarbonization of the blood must suffer, as we see

in extensive burns, in skin diseases, or when the surface of the body is covered with impermeable substances. Added to this, that through the loss of the caloric, the flow of blood, as well as the tissue metamorphosis, is rendered slower, and the respiratory exchange of gases therefore become also diminished. The blood is rendered more venous; does not stimulate the centre of respiration in such a manner as to excite the respiratory nerves normally, and hence the gradual sinking of respiration and circulation.

When these disturbances have reached a certain degree, where the blood is incompletely, or not at all, decarbonized, it ceases to stimulate the brain, already anæmic in consequence of the weakened circulation. Somnolency, apathy, lethargy, supervene, and finally, paralysis of the brain.

The disturbed metamorphosis of venous blood into arterial, is alone the cause of phenomena fatal to life, when the animal body is exposed to intense cold sufficiently long. In this way the author explains the process of death by freezing. *Practically*, the induction of artificial respiration, if necessary, in cases of suspended animation from exposure to cold, is of importance as a corollary to the author's views.

Carbonic Acid in the Blood.

Dr. E. SERTOLI contributes an article to the *Centralblatt für die medicinischen Wissenschaften* of February 29th, 1868, in which he expresses the opinion that all the difficulties found in explaining the elimination in the lungs of carbonic acid from the blood, vanish if we suppose that the albuminous materials of the blood are acting as acids; and (as is known to be the case with phosphoric, boracic, and silicic acids), that they displace carbonic acid from its combination under some circumstances, while under others they are ready to surrender the alkali which they had just seized on.

Acting on this theory, Dr. Sertoli (on the suggestion of Mr. Hoppe-Seyler) undertook a series of experiments with the following results.

Albumen, obtained from serum by being first precipitated by an excess of alcohol, and all the liquid then pressed out, is, in a state of fine division, mixed with water, and then freed from all absorbed gases by the air-pump. After this, on the addition of carbonate of soda, carbonic acid is set free. The same thing takes place when globulin from the crystalline lens is used instead of the albumen of serum. The globulin may be first precipitated from its watery solution by carbonic acid, and then placed under the air-pump until no more gas is given out, and here also, when carbonate of soda is added, carbonic acid is set free.

In this last instance it is seen that carbonic acid first displaces an albuminous substance from its combinations, and is afterward itself displaced.

In another experiment he found that air entirely freed from carbonic acid, if placed in the peritoneum or into the subcutaneous cellular tissue, will, after about an hour, contain at least 6 per cent. of carbonic acid. From this he infers that it is entirely superfluous to suppose that any specific action is necessary in the lung-tissue to cause the elimination of carbonic acid from the blood.

Under the air-pump the carbonic acid is at first given off very easily, but the latter portions slowly: part of it is therefore very firmly combined.

Regeneration of Striped Muscular Tissue after Traumatic Injuries.

Dr. MASLOWSKY, of St. Petersburg, communicates a short paper to the *Wiener Med. Wochensch.*, giving a résumé of over seventy experiments and observations on the neoplastic and reparative process in traumatic injuries of striped muscles. His conclusions are as follows:

- (1.) Newly formed striated muscular fibres, originate during regenerative processes from the young cells appearing between the old fibres.
- (2.) The old fibres take no part in the neoplastic process.
- (3.) The new formative cells in the interstitial tissue of the muscular substance are principally developed from the white blood-globules thrown out; it does not appear whether or not a portion of them originate immediately from the primitive cells of the interstitial connective tissue.
- (4.) The white blood-globules thrown out do not only take part in the formation of pus, but also in the formation of the permanent cicatrix of muscles as well as of tendons.

Also the following practical points:

(a) Regeneration is complete after subcutaneous transverse or longitudinal wounds of the muscles of the extremities of the body and longitudinal wounds of the tongue. Such wounds heal without suppuration by first intention, and leave after thirty days no visible cicatrix.

(b) Regeneration is incomplete in torn, contused wounds, especially when complicated with a fracture of bone. These wounds heal by suppuration, leaving a considerable cicatrix, consisting of connective tissue and young muscle-cells; the latter however in less number than after subcutaneous division. The connective cicatrix is gradually diminished, as the muscle-cells are more numerous developed. Capillaries are formed in these cicatrices.

(c) The application of a plaster splint or bandage seems to exert no influence upon the process of muscular regeneration.

(d) Sutures in muscular wounds of the extremities and of the trunk are superfluous. In one case extensive suppuration and the formation of abscesses in remote parts of the same extremity followed the application of common sutures. Sutures of *fil de Florence* (sea-grass) caused no suppuration, but seemed to favor fatty metamorphosis of the neoplastic elements. These sutures, however, favored the healing of wounds of the tongue by first intention and the regenerative process.

(e) The form of the wounds of the muscular fasciæ and aponeuroses has no influence upon the regeneration of the muscles; transverse wounds of these fasciæ, however, do not close but leave deficiencies.

Bilirubin-Crystals in the Blood of the New-Born.

Professor E. NEUMANN, of Königsberg, reports in the *Archive für Heilkunde*, the history of eight cases of infants who died within a few days after birth, where the microscopical and chemical examination showed the presence of bilirubin-crystals in the vessels of the kidneys, liver, spleen, the blood generally, and in other organs. In all these cases there was more or less icterus (icterus neonatorum). The author considers these crystals as doubtlessly post-mortem formations, and as

possible only in cases in which during life the coloring matter of the bile circulated in the blood in a state of solution. Although icterus neonatorum is so common, that it may be considered as a physiological phenomenon, still the author does not consider the post-mortem occurrence of bilirubin-crystals also as normal, because he concludes from his observations that the separation of these crystals in the blood of the new-born only takes place, if in addition to the icterus there was a concurrence of certain other pathological conditions. For, in a second series of eight cases, which also presented icterus, no such crystals were found. In all cases of the first series, death had either directly or indirectly been caused by *disturbances of respiration*, which form the pathological factor of these crystalline deposits.

Results of Section of the Nerves of the Intestine.

ARMAND MOREAU, of Paris, contributes to the *Centralblatt für die Medicinischen Wissenschaften*, of March 28th, 1868, an original paper, containing a description of some experiments made by him in the room of Claude Bernard at the College of France.

He tied the intestine of a dog in four places, so as to have three isolated and empty portions: he then cut the nerves going to the central one of these three portions, and found that in the course of a few hours it became full, while the other two remained empty. Over three fluidounces of liquid were thus found after three hours in one dog, and seven fluidounces in another which was killed eighteen hours after the operation.

An analysis of the liquid disclosed mucus, mucous cells, traces of food, and sometimes also fragments of tænia.

When filtered it is clear and slightly yellow, the sp. gravity is 1.008. The reaction is strongly alkaline; carbonates and bicarbonates are present.

In 100 parts 0.35 to 0.45 is organic matter, and 0.9 to 0.95 mineral matter; the rest is water.

Of the ashes 34 to 36 per cent. is sodium, 2 to 6 per cent. potassium. 32 to 45 per cent. chlorine, and 4 per cent. sulphuric acid; and in one analysis only 2 per cent. of phosphate of lime was found.

Influence of the Minute Bloodvessels upon the Circulation.

In the report of the proceedings of the Royal Medical and Chirurgical Society at the meeting of December 10th, 1867, published in the *British Medical Journal* of December 21st, 1867, it is mentioned that a paper was read by GEORGE JOHNSON, M.D., in which reference was made to the experiments of Hales upon animals recently killed, as well as to those of Blake upon living animals, to prove the influence of the minute arteries upon the circulation. The sudden arrest of the circulation through the lungs by the admission of atmospheric air into the veins, and the impediment to the pulmonary circulation in cholera, were both referred to the same cause, namely, contraction of the small arteries upon their contents. Again, some of the phenomena of apnoea admitted of complete explanation only by reference to the contraction of the small arteries. A dog was killed by a ligature on the trachea. The chest being opened immediately, the right heart was distended, and the left nearly empty. The lungs were pale, nearly bloodless, and

extremely collapsed. The minute pulmonary arteries must have arrested the mass of the blood before it reached the capillaries. A comparison of the phenomena of apnoea with those of renal disease appears to warrant the conclusion that an impeded circulation, the result of arterial contraction, may occur under two different conditions: 1. When the respiratory changes in the lungs are impeded, or when the secretory action of a gland, such as the kidney, is impaired, the minute arteries of the lung or of the kidney, in obedience probably to a stimulus conveyed to them through the nerves from the capillaries, restrict and retard the blood-stream. The anæmia of the pulmonary capillaries in cases of acute apnoea, and the overgrowth of the muscular walls of the renal arteries in cases of chronic Bright's disease, are results of one and the same physiological principle. 2. The minute arteries in any part of the body may be excited to contract by their contents becoming abnormal, and therefore more or less noxious to the tissues. We have an illustration of this in the resistance which the systemic arteries offer to the passage of macerated black blood, and of blood contaminated with urinary excreta. We have another illustration of it when certain foreign materials are either accidentally in man, or designedly, in animals, introduced into the veins, and then arrest the flow of blood through the lungs. The late Dr. Allison and many other pathologists have taught that the minute bloodvessels have the power to antagonize the heart and to check the circulation. This power of resistance has been almost universally believed to reside in the capillaries, which have no contractile power; while the stop-cock action of the small arteries, with their contractile muscular walls, has been almost ignored by pathologists. One of the main objects of this communication was to direct attention to this action of the small arteries in various pathological states of the system, and to adduce anatomical as well as physiological evidence of its reality and its powerful influence.

Dr. Pavy said that the gist of Dr. Johnson's paper seemed to be to assign to the minute arteries that which had been assigned to the capillaries. The author of the paper had referred to air in the blood, and had ascribed death in this condition to arrest of the pulmonary circulation. But did this stoppage arise from obstruction of the flow of blood through the small arteries, or through the capillaries? Dr. Pavy thought the latter was the manner in which death was produced. Again, Dr. Johnson had spoken of the obstruction to the circulation through the lungs, produced by tying the trachea; but what proof was there here that the blood was arrested in the small arteries rather than in the capillaries? The only instance in which he could recognize obstruction in the small arteries was in Dr. Sanderson's experiments with woorara. He (Dr. Pavy) had found that black blood flowed through the capillaries when death was produced in other ways than by woorara, *e.g.*, by pitting; for in such cases he had found that chemical substances passed onward into the veins.

Dr. Dickinson said that there were two points in which he could not agree with Dr. Johnson. The author did not allow, as he (Dr. Dickinson) understood, that the intertubular connective tissue of the kidney was liable to disease; whereas there was reason to believe that it was very liable to disease, and that the granular kidney arose from changes in this tissue. Dr. Johnson said that the small granular kidney could not depend on intertubular deposit because of its vascularity. But this deposit, though destroying other portions of the organ, did not destroy the small arteries. Dr. Johnson believed the deposit in the tubules to consist of epithelium, but Dr. Dickinson held that it was formed of broken-down fibrine. He

could produce a similar material by the decay of fibrine under water. Contrary to what Dr. Johnson had said, the obstruction to the circulation was found by experiment greater in the small than in the large kidney of Bright's disease.

Dr. Burdon Sanderson would refer to some facts which had a bearing on Dr. Johnson's views as to the power of the small arteries to modify the circulation by their contraction. He alluded to the experiments of Ludwig on the action of certain sensory nerves in modifying the arterial pressure. By exciting the central end of a cardiac nerve, the pressure in the hæmadynamometer sank from 6 to 4 or even $3\frac{1}{2}$ inches. If the abdomen of the animal were laid open, the change in the color could readily be observed. The same effect was produced after the heart had been isolated from the nervous centres; but this result was annihilated after division of the splanchnic nerves, and, on irritating the end of the splanchnic nerve, the arterial pressure was increased. Dr. Johnson believed that woorara acted not on the heart but on the small arteries. But Ludwig had found the same results produced from the action of the depressor (cardiac) nerve, whether woorara had or had not been given. In reference to apnœa, Dr. Sanderson said that the fact that non-arterialized blood did not increase arterial pressure, was shown by proper instruments. Though it was increased for one or two minutes by the struggles of the animal, when these ceased it diminished. Dr. John Reid's experiments seemed to prove the contrary; but it must be remembered that, since Dr. Reid wrote, the kymographion and other means of accurate investigation had been invented. Again, the quantity of air in the lungs modified the circulation through these organs.

Dr. Johnson, in reply, said that he had stated that physiologists were generally agreed as to the function of the small arteries; but pathologists had very much neglected to apply this knowledge. No one doubted that black blood could pass through the systemic arteries; but its passage was slower. The question raised by Dr. Dickinson could only be settled by actual observation and the comparison of specimens. But he could not agree that the redness of the small kidney was due to the vascularity of the new tissue. As to the intertubular tissue of the kidney being liable to disease, some said that there was no such tissue; and he (Dr. Johnson) had even been called to account for speaking of a matrix in the kidney. At all events, there was very little intertubular tissue. He considered that the appearances described as changes in this tissue were in reality due to the atrophied remains of the tubes. Dr. Reid's experiments on the pressure of the blood appeared to have been performed carefully, and to show that an increase of pressure continued some time after the animals ceased to struggle. Mr. Erichsen had found the same result after pitting animals. He could not agree with Dr. Sanderson's statement that the pulmonary circulation was influenced by the amount of air in the lungs; at least the amount of air could have little effect.

Experimental Researches on the Absorption of Fat.

Dr. RADZIEJEWSKI, of Berlin, publishes in *Virchow's Archiv*, for May 1st, 1868, an account of several experiments made by feeding animals with different kinds of fatty matters, and with soaps, for the purpose of determining how the fat-tissues are formed. He begins by calling attention to the difficulty in explaining how an emulsion, composed, as it is, of small globules, each covered with an albuminous membrane, can pass through the epithelial tissues and reach the absorbents; and

then recalls the fact that Claude Bernard has proved that the pancreatic juice has the power of decomposing fat into its acid and glycerine, and that the acid, in this case, would of course be immediately seized on by the base of some of the carbonates, or other salt in the alimentary canal, and thus soap formed. The author suggests that to reconstitute fat from this soap, may be the office of the fat-cells, the gland-like constitution of which was first called attention to by Kühne. He also suggests the possibility of the action of the blood-corpuscles, or of the epithelium of the intestine itself, as it passes the soap on to the lacteals.

The fact is referred to, of the discovery of the two phosphorous fats of the blood, *Protagon* and *Lecithin*; and that no thorough analysis of the blood or chyle has been made since these important bodies were known to exist.

The first experiments the author made, determined that fats which remain solid at the temperature of the body, will not be absorbed into the circulation, at least to any perceptible extent, even if made into an emulsion before taken into the stomach. This disproves the idea of Kühne, that the albuminous coating of the fat globule (the haptogen-membrane), is the all-important element in the absorption.

The experiments were made in the following way. He dropped melted wax into a warm solution of albuminate of soda, as long as it, by shaking, formed an emulsion. He then, with a stomach-tube, injected some of it four or five times, at intervals of an hour, into the stomach of a little dog, which had eaten nothing containing fat, for a week previously. The dog was then killed, but the lymphatic ducts of the intestines were found clear and transparent, and most of the fat remained in the stomach and intestines. This experiment was repeated with two other dogs, with the same results.

The next series of experiments was undertaken in accordance with the suggestion of Kühne, that, in order to prove the direct transfer of fat, used as food, to the tissues, it would only be necessary to show that when animals were fattened with fatty substances not usually found in their tissues, these substances would be found unchanged.

Our author first gave, during several months, to some dogs, food containing no fat, but soap made from rape-seed oil. In order to be sure that no fat was in the food, they were given no meat except lean horseflesh, previously carefully examined lest there should be fat. By examining the fæces, he found that most of the soap had been absorbed; only a small percentage being found to be evacuated. The result was the same when palm oil soap was used instead of that of rape-seed oil, and the proportion found in the fæces showed that soap is much more readily absorbed in the alimentary canal than oil, as when rape-seed oil or palm oil itself was given, a much larger quantity was evacuated.

Other very carefully-made experiments with soap, made from rape-seed oil, resulted in finding the constituents of this oil (after the animal was killed), in both the muscles and mesentery, mingled with the normal constituents of the fatty tissues in those places.

When rape-seed oil itself was given as food, instead of the soap, the result was not as satisfactory: the author was not able, *positively*, to determine its presence in the body, although he felt very sure it was there.

Waste of Muscle during Exercise.

Dr. HERMANN communicates articles, on this subject, to the *Berliner Klinische Wochenschrift*, of May 11th, 1868, in which he attempts to explain the fact that, while after moderate exercise there is no increase of nitrogen excreted, there is an increase after violent exercise.

He considers that the contraction of a muscle, during life, is analogous to, or perhaps identical with, its post-mortem rigidity; both being caused by the coagulation of myosin, the chief nitrogenous element of muscle; and that, as after death, the earlier stages of rigidity can be checked by passing arterialized blood through the vessels, so, during life, the circulation acts whenever a muscle has been contracted. He shows that stiffness, after death, is hastened by constant irritation of the muscle; and he supposes that, in the cases where, after excessive exercise, more urea is secreted than before, the muscle has been so much used that some of its fibres have become permanently contracted, beyond the power of the oxygen, in the blood, to reinstate them in their normal condition, and consequently the coagulated myosin, and, indeed, the whole fibre, must be eliminated and replaced. He supposes that, in ordinary contractions, the myosin is partially coagulated, and then immediately brought back to a condition of fluidity by oxygen, so that the same nitrogen is used over and over again. He also supposes that the heat produced constantly in the tissues, is not caused by their consumption or combining with oxygen, but by the consumption of some undetermined carboniferous substance in the circulation itself.

Stoppage of the Carotid Circulation during Efforts.

Dr. FELIX GUYON (*Archives de Physiologie*, etc., No. 1, 1868), has written a very interesting paper on the stoppage of the carotid artery during prolonged efforts. It rests upon the fact, that during violent, prolonged, and silent or mute efforts, the pulsation of the temporal artery is no more felt, whilst the radial pulse, though weaker, is still perceptible.

This is owing to the compression of the common carotid artery by the lobes of the thyroid body, by the following mechanism. One of the first results of the effort is to render immovable the hyo-laryngeal apparatus, and therefore the thyroid body in front of the vertebral column; also the contraction of the muscles, and particularly those of the trunk and neck. The aponeurosis of the neck necessarily participates in the tension of the muscles. It results from these dispositions that when, under the influence of an effort, the thyroid body swells by the afflux of the venous blood, it cannot expand freely, except posteriorly, that is, when the gland is in contact with the carotid. The vessel is then compressed upon the vertebral column, and the circulation stopped.

The reason of this disposition of nature is to prevent the afflux of arterial blood to the brain at a moment when the venous blood is stagnant under the influence of the effort. It is a compensating action.

Dr. Matiolet, in his *Memoir of the Vascular System of the Hippopotamus*, shows a disposition special to that animal, and consisting in this: that the stylo-hyoid and gastric muscles, instead of leaving a free passage to the external carotid, are in immediate contact with it, and when they contract, compress the vessel and stop the blood that goes to the head. The purpose seems to be, undoubtedly, to prevent cephalic congestions during the long suspension of respiration when the animal is under water.

III. PATHOLOGY.

Pathological Anatomy in Traumatic Paralysis.

Dr. W. ERB, of Heidelberg, has made experiments on dogs and frogs, to discover the changes resulting from section or crushing of nerves; and publishes the results in the *Centralblatt für die Medicinischen Wissenschaften*, of February 15, 1868. They are as follows:

1. From the day of the injury, the irritability of the nerve to electricity (whether the stream be constant or induced) gradually diminishes, and finally it is no longer affected by any current. The distal portion of the nerve is the last portion to become insensible. There is, however, sometimes, a slightly increased irritability immediately after the injury. When the injured point is healed, sensibility gradually returns, and the irritability increases as fast as regards one kind of current as the other.

2. At a certain stage of the regeneration of the degenerated nerves they can carry on messages coming from the brain, or impressions made by electricity above the injured point, but are not susceptible to irritations at the place itself. This occurs in dogs at from twenty-two to twenty-five days after the injury.

3. Irritability in the *muscles* diminishes for both kinds of current for one or two weeks, and then increases gradually as regards the constant stream, while it *continues to diminish* for the interrupted or induced stream.

4. In man, about three weeks after an injury to a nerve, the muscles supplied by it become more irritable than before to *mechanical* impressions.* This increased irritability lasts an uncertain length of time.

5. The neurilemma of the nerve-fibres becomes thickened, and filled with a mass of cells, while degenerating.

6. The fibrillæ of the muscles supplied by the nerve become atrophied, but the cellular tissue of the muscles is increased in amount. The whole muscle *diminishes* in size in spite of this increase of its cellular element.

In the *Archiv der Heilkunde*, for 1868, page 198, there is an article by Prof. E. NEUMAN, of Königsberg, in which he publishes the results of experiments made by him on the section of nerves in dogs. One of his conclusions was the same as that marked 5, in the list of the results of Dr. Erb's experiments, viz., that in the sheath of the nerves there was a great increase of nuclei after section. He also found that in regeneration of the divided nerves, the formation of the new fibres took place *within the old ones*, or as he expresses it, in an endogenous manner, and this both in the central and peripheral portions.

His experiments were made usually on a subcutaneous branch of the Nervus tibialis, which he examined four days to six weeks after the section. The nerve was first soaked in a solution of osmic acid (1 part to 500) for twenty to twenty-four hours, and then sometimes placed in a solution of carmine in ammonia; after which it was dissected in dilute glycerine (1 part to 2 of water), and then examined microscopically.

The osmic acid not only facilitates the examination by its coloring power, but also, as was first pointed out by Schultze, it loosens the mutual adherence of the fibres, so that they can be more readily isolated.

* See Erb, Verhandl. d. Naturk. Med. Vereins z. Heidelberg. Bd. IV, p. 116, and since then Hitsig (*Virch. Arch.*) and Eulenberg (*Berlin. Klin. Wochenschrift*).

The observations which Bruch,* and Schiff,† profess to have made, that divided nerves sometimes unite by the first intention, Prof. Neuman was unable to substantiate, even in a case where the nerve was only partially cut across. In this case, however, he found *new* fibres already formed in *fourteen days* after the operation.

Since Nasse‡ first described the degeneration of cut nerves, authors have varied very much in their opinions. Waller§ and Bruch|| thought there was a *complete* fatty metamorphosis; but later authors¶ maintain that it is only partial; differing only as to the particular parts which remain.

Enormous Fecal Abscess Perforating the Diaphragm.

In Virchow's *Archiv* for 1868, February 10th, page 227, there is reported by Prof. Dr. HOFFMAN, of the Institute for Pathological Anatomy in Basel, a case which occurred in the hospital there, in which a perforation of the ileum took place in its lower portion, and at the left side; after which there was formed a long canal, passing to the right and the left between the skin and the peritoneum, and at last finding openings externally through the inguinal canals on both sides. In spite of this, the abscess extended as far as the diaphragm on both sides; and on the right passed through the diaphragm, and, pushing the pleura before it, without perforating it, compressed the lung on that side so much as to render the middle and lower lobes utterly useless. Prof. Hoffman says that in three other cases of perforation of the diaphragm by an abscess which he has seen, there was perforation of the pleura also, in each instance.

One of these cases is reported in full immediately after the one recorded above. It was a case of perforation of the colon. The other two were of abscess of the liver.

A case of perforation of the gall-bladder in consequence of obstruction of its duct, is detailed also by Dr. Hoffman, in the same number of Virchow's *Archiv*. The abscess here, as well as in the two cases reported, of perforation of the intestine, burrowed for a long time immediately under the peritoneum, without any pus entering the cavity of that serous membrane.

Idiopathic Phlegmonous Inflammation of the Submucous Cellular Tissue of the Stomach.

Dr. THOMAS HUN, of Albany, N. Y., reports, in the *New York Medical Journal* for April, 1868, the post-mortem appearances in the case of a girl 10 years of age, who died after three days of obstinate vomiting, having had slight tenderness over the epigastrium, and some headache, but no interruption of consciousness up to the hour of her death.

Autopsy, six hours after death: External appearance of the body, natural. *Thorax*: the right lung was firmly adherent to the walls of the thorax; otherwise, natural. *Abdomen*: the stomach appeared very heavy and large. Upon

* Zeitschr. f. Wissenschaftl., Zoologie VI, p. 135.

† Archiv f. Gemeinschaftl., Arbeiten II, p. 411.

‡ Müller's Archiv, 1839, p. 405.

§ Müller's Archiv, 1852, p. 392.

|| Archiv f. Gemeinschaftl., Arbeiten II, p. 416.

¶ Lent. Zeits. f. Wissens., Zoologie VII, p. 145; Hjelt. Virchow's Archiv XIX, p. 252; Eulenberg and Landois, Berlin. Klinische. Wochenschr., 1865, No. 45 and 46; Philippeaux and Vulplan, Gazette Medical, 1860, No. 27-39.

removing it and opening its cavity, it was found to be empty, but the walls were fully half an inch in thickness, and consisted of the mucous lining and peritoneal investment, with an intervening layer of purulent deposit. A milky liquid could be pressed out from the cut surface in abundance, which responded to the chemical and microscopic tests for pus. A large number of inflammatory granular corpuscles were observed under the microscope, mingled with the pus corpuscles. This purulent infiltration of the connective tissue extended over the whole circumference from the cardiac to the pyloric orifice of the stomach, and the line of division between the gastric and duodenal mucous membrane was marked by an abrupt ridge, caused by the lifting up of the former by the submucous purulent exudation. The gastric mucous membrane was of rather a deeper color than usual, and the peritoneal coat, although somewhat injected, presented a smooth, shining appearance, without any inflammatory product. A microscopic examination showed the termination of the gastric follicles, surrounded by pus-corpuscles, while no trace of the muscular fibres could be found, except just under the peritoneum; thus demonstrating that the inflammatory action involved only the connective tissue intervening between the mucous and muscular coats. All the other abdominal viscera were examined, and found normal. A firm adhesion existed between the convex surface of the liver and the diaphragm.

In looking up the authorities in regard to the above rare and interesting case, I find that Rokitsky states that "idiopathic inflammation of the cellular tissue of the stomach, resembling pseudo-erysipelas, and passing on to suppuration, is a very rare phenomenon; it not infrequently occurs as a secondary process, analogous to the metastases of specific acute dyscrasæ. The parietes of the stomach appear thickened; the stratum of submucous tissue is distended with pus; it is soft and friable; the superincumbent mucous membrane is reddened, and, at intervals, tense. After a time it gives way at these points, and by numerous irregular cribriform openings, the pus exudes into the cavity of the stomach." Lebert, in his work on Pathological Anatomy, speaks of "a rare disease, usually acute," under the head of "Phlegmonous Sub-mucous Inflammation of the Stomach," and gives an account of four cases, with a description of the post-mortem appearances. Two of these cases were idiopathic, one metastatic (following puerperal peritonitis), and in one, which he calls "Phlegmon Propagé," the patient, having suffered for a long time from a chronic gastric disorder, was suddenly attacked with erysipelas of the face, followed by pultaceous stomatitis, and death in nine days. The autopsy revealed purulent peritonitis, and distinct purulent deposits in the submucous cellular tissue of the stomach. Both J. B. Frank and J. Frank refer to phlegmonous inflammation of the stomach, and Habershon reports a case, with the autopsy, in his work on "Diseases of the Alimentary Canal."

Pus within Epithelial Cells.

RICHARD VOLKMANN and F. S. STENDENER, of Halle, publish, in the *Centralblatt für die Medicinischen Wissenschaften* for April 18th, 1868, an account of the results of numerous observations made on inflammation in mucous membranes with pavement epithelium.

They pronounce erroneous the idea that pus is ever formed within epithelial cells, and say, that in cases where this appearance is presented, the pus-cells have been pushed into them from without, so as to rest in cup-shaped depressions; or

sometimes to be inclosed by them entirely in the process of their growth. By soaking a preparation for some time, the pus cells often drop out, when not entirely inclosed, and the cup-shaped depressions may then be seen to remain.

They suppose that, in the progress of the pus cells outward from the cellular tissue, they become wedged in tightly between young and growing epithelial cells, which, while yet soft, will receive them in depressions of their substance, and which afterward may, in the process of development, grow around them. The epithelial cell, when it becomes horny, will inclose them all the more firmly, until it is, in the process of desquamation itself, pushed off as of no more use.

Pus-cells the same as the White Blood Corpuscles.

In the *Centralblatt für die Medicinischen Wissenschaften*, for January 11th, 1868, there is an article by Prof. W. KOSTER, of Utrecht, on inflammation and suppuration in the liver, in which, after calling attention to the discovery of Cohnheim, that the pus found in the mesentery of the frog, in inflammation, can be seen to be directly formed from the white corpuscles of the blood, he claims to have made observations on the liver of dogs, which give results coinciding entirely with this discovery.

In his experiments he excited inflammation by wires, injections, or by hot needles, and made critical examination some days afterward, after killing the animal.

The serous coating of the liver he found, on the second day, swollen, opaque, and stuffed full of round lymphoid cells (pus-cells), and no appearance of the epithelium, or of the cellular tissue, which would justify an idea that the cells were formed from them. The liver, immediately under the inflamed serous membrane, showed swollen and granulous liver-cells, but very few pus-cells at this time. On the third and fourth days, however, his observations were more interesting. They were made on the liver itself, which by this time was partially softened and bleached.

He found a large number of lymphoid cells in the interlobular cellular tissue, around the bloodvessels, stretching the parts there, but encroaching little, or not at all, on the proper liver-cell structure. Two days later still, the inflamed parts were entirely softened, and with the pus-cells he found mingled liver-cells, some broken up, and some entire. Even here he found, on the verge of the inflamed part, the same phenomena as at the most softened place two days before. In no case were there found pus-cells in the central portions of a lobulus.

Prof. Koster thinks that the white blood corpuscles in leucocythemia also "emigrate," as he expresses it, into different parts of the body. He found the peritoneum, in one case, full of them.

Chorea a Rheumatic Disease.

In the *Archives Générales de Médecine*, for 1868, there is published a series of four articles on chorea, by Dr. HENRI ROGER, Member of the Academy of Medicine and Physician to the Hôpital Beaujon. The last of these articles appeared in the April number of the journal.

He considers the prognosis of chorea as much more unfavorable than it has been until now considered; indeed, he calls it one of the most formidable affections of childhood, and this on account of the cardiac affection, which (as well as rheu-

matism), he considers, not as a complication, but as constituting an essential part of the disease.

The disease of the heart, in 71 observations made by Dr. Roger, was, in 47 cases, simple endo-carditis, endo-pericarditis in 19, and pericarditis alone in 5 cases. The convulsive movements often pass away, and yet leave behind a slight bellows murmur at the apex* of the heart, heard during the first sound, and indicative of an endo-carditis, which very often progresses, and becomes (some years afterward) a serious organic disease.

As regards the order of succession of the three symptoms,—rheumatism externally, convulsive movements, and disease of the heart,—there is no law, although rheumatism usually comes first; neither is there any as to their comparative severity; sometimes one may be so severe as to overshadow the rest, and sometimes they may be of nearly equal intensity.

The most common *external* manifestation of rheumatism in these cases is articular; I say *external*, for the convulsive movements themselves are considered by Dr. Roger as caused by rheumatism of the nerve-centres, or of their meninges.

In one observation, scarlatina was the origin, or immediate precursor of the disease.

Gastro-duodenal Fistula.

In the *Deutsche Archiv für Klinische Medicin*, published in Leipzig, 1868 (1st part), there are some remarks by Prof. THIERFELDER, of Rostock, on a case of ulcer of the stomach, which lasted several years before it caused death.

At the post-mortem examination the stomach was found to be of enormous size, and an ulcer, nearly two by five inches, had eaten entirely through its wall, close to the pyloric orifice, exposing the pancreas and the colon, and opening, by a large orifice, into the duodenum, a large portion of the walls of which had been destroyed, so that the part left of it near the pyloric orifice was little more than a cord, and the opening into its healthy portion was so far off from this cord that the exact pathological condition was at first difficult to appreciate.

Prof. Thierfelder mentions two similar cases, one reported by Mohr (*Casper's Wochenschrift*, 1842, No. 16), and the other by Dittrich (*Prager Vierteljahrschrift*, bd. xiii, s. 125), and says that Rokitsansky,† in commenting on them, has made a mistake in supposing, as he does, that two ulcers, one on the stomach and the other on the duodenum, must have originated simultaneously. Our author thinks it much more probable that there had been originally an abnormally close connection between the duodenum and the lesser curvature of the stomach, and says that he has seen, in the healthy stomach, cases in which such adhesion existed for a short distance.

Jaundice caused by Closure of the Microscopic Gall-ducts.

In the *Leipzig Archiv der Heilkunde*, 3d number for 1868, there is an article by Dr. WILHELM EBSTEIN, Prosector to All-Saints Hospital, in Breslau, giving an account of the pathological appearances in a case of jaundice caused by phosphorus poisoning. The gall-bladder and the larger gall-ducts were empty, and covered with whitish epithelium; but the finer ducts (those barely visible to the

* A bellows murmur at the base of the heart, under similar circumstances, might only indicate anæmia.

† *Lehrbuch der Pathol. Anat.*, 3 Aufl., Bd. iii, s. 168.

naked eye) could be seen by the microscope to be completely corked up by white masses of epithelium.

Leucin and tyrosin, the former in small, and the latter in larger amounts, were found in the liver, and in the urine, both before and after death. None of the coloring matter of the bile was detected, either in the urine taken from the body at the post-mortem examination, or in that passed by the patient the day before her death, although the skin was yellow over the whole body; the vagina, and even the mucous membrane of the bladder itself showed a yellow color. Dr. Ebstein mentions that he had already published a similar case in the *Leipzig Archiv* for 1867, page 506-517; and that the fact of the stoppage of the finer ducts of the liver causing jaundice in acute phosphorus poisoning, was first demonstrated in dogs by Wyss and Alter; by the former in the *Leipzig Archiv* for 1867, p. 469 to 471, and by the latter in an inaugural dissertation on the subject, published at Breslau in 1867.

Autopsical Illustrations of Some Points in Cerebral Pathology.

The following paper was communicated by Dr. GEORGE MARTIN, of Chester, Pa., to the Pathological Society of Philadelphia, at its session June 13th, 1867, and is published in the *American Journal of the Medical Sciences*, for January, 1868:

Sixty autopsies were made in the U. S. General Hospital at Chester, Pa., during the summer and fall of 1863; and in many of them important lesions within the cranium were found. The following fifteen cases were selected because their wounds were distant from the head, and those among them unwounded had been suffering from diseases that had no connection with the brain. Some apology may be due for thus noticing them, as they only assist in confirming what has already been often asserted, viz., the frequent production of inflammation of the serous membranes, and especially of the arachnoid, by an ichor-poisoned blood; but it is a subject of great importance, and one of which all may not be fully cognizant. There is no tissue of the body which suffers more frequently from inflammation than the serous, and oftentimes without the symptoms at all betraying it; and in the cases now brought to notice, but few of them presented any indication of the lesions taking place until a few hours before death, and in a number of them such a complication was entirely overlooked. Most of them were treated by other surgeons, and not seen by the reporter, until carried to the dead-house, and but few notes of their symptoms and treatment were even available. There was, however, one condition of the bodies noticed, which was very characteristic of their condition, viz., a drawing downward and inward of the toes and metatarsal bones, giving the feet a peculiar arched appearance. This symptom I have several times observed during life, in cases of spotted fever, and in one of the latter, where it was well marked, the patient recovered; but I have never seen it in the dead subject without finding arachnoid effusion.

Partial Gunshot Fracture of the Femur.—The body was in good condition, and the adipose tissue well developed. There were numerous recent pleuritic adhesions, but the lungs were healthy. The heart was large and soft. The spleen was very large. The femoral vein was full of pus, and its internal coat softened; there were several coagula in the ascending cava, and the medulla of the femur was inflamed; there was an effusion of serum into the ventricles and under the arachnoid, which was opaque and adherent.

Gunshot Fracture of the Head of the Humerus, with Complete Destruction of the Articular Cartilages.—There were small abscesses in both lungs, and part of the upper lobe of the right anteriorly was solidified. There were two ounces of serum in the pericardium, and fibrinous clots in both ventricles of the heart; that in the left extended along the aorta for about twelve inches. The brain was congested, especially at its base, and there was effusion into the ventricles and arachnoid, with opacity of the latter.

Gunshot Fracture of the Astragalus, comminuting the Bone, which was bathed in Pus.—There was opacity of the arachnoid, with effusion under it, and into the ventricles of the brain. No other lesion was noted.

Gunshot Fracture of the Head of the Fibula, and Partial of Head of Tibia, with a Dissecting Abscess of the Thigh and Leg.—There were recent pleuritic adhesions on both sides of the chest, and an old and very firm one under the right nipple. There were adhesions of the arachnoid, with opacity and the effusion of serum.

Gunshot Wound of the Upper Part of the Thigh, with Caries of the Femur, and a Dissecting Abscess.—There were adhesions of the right pleura, and a large effusion into the ventricles of the brain, and into the arachnoid, which was opaque.

Amputation of the Left Leg for a Gunshot Fracture.—There was slight effusion into both pleuræ, and half an ounce of bloody serum in the pericardium. There was fatty degeneration of the heart, and softening of the muscular structure; the kidneys were pale and soft; the spleen was enlarged and softened, crepitating under the finger; the lining membranes of the arteries and veins were stained red, and the latter were full of gas; the substance of the brain was much softened; the ventricles contained bloody serum, and there was thickening and adhesions of the arachnoid, with effusion. This examination was made on the 17th of September, and though the period after death was not noted, it could not have been more than twenty-four hours, as the autopsies were made daily; therefore decomposition was remarkably rapid, and probably had commenced before life was extinct.

Chronic Dysentery.—The liver was apparently healthy, the spleen very small and hard, and the colon and rectum inflamed and ulcerated. There were numerous recent pleuritic adhesions on the right side, and a few on the left. The lower portion of the right lung contained an abscess, and calcareous granules as large as wheat grains were scattered over its anterior surface; there was subarachnoid effusion, with adhesions of its opposing surfaces.

Chronic Dysentery.—The mucous membrane of the stomach was red and thickened; the liver was large, and contained four abscesses from the size of a shell-bark to that of a walnut with its hull. The kidneys were pale and soft; the colon and rectum ulcerated, the ulcers being half an inch in diameter. There were very numerous adhesions of the left pleura; the ventricles of the brain and the subarachnoid tissue contained an abnormal quantity of serum, and the membrane was adherent; the blood was fluid.

Amputation of the Right Leg through the Middle Third, for a Gunshot Wound.—There was periostitis of the femur extending four inches above the knee; also of the tibia, with complete destruction of its medulla. The knee-joint was full of pus, and the semilunar cartilages were softened. The right pleura contained a quantity of pus, and was adherent in some places. The right ventricle of the heart was thin, and its cavity full of light, greasy-looking coagula. The liver and kidneys were pale and soft. There was effusion into the ventricles of the brain, and also under the arachnoid, with numerous attachments of the latter.

Partial Gunshot Fracture of the Tibia, near its Head.—The bone was deprived of its periosteum for six inches of its upper end, and a large dissecting abscess extended from midway of the leg to the groin. The cavity of the knee-joint was opened, and the cartilages destroyed. There was effusion into the ventricles of the brain, and also under the arachnoid, with adhesions of the latter. The pleura was slightly adherent at the top of the left lung, and much more so on the right side; and in this cavity there was an abnormal quantity of serum, with shreds of lymph floating in it. A large lobulated abscess was found in the right lobe of the liver, containing about twelve ounces of pus; the remainder of the organ was pale and soft.

Gunshot Fracture of the Left Ilium, the ball having passed through the Pelvis.—The ring finger of the left hand had been amputated, and a palmar abscess had formed and completely destroyed the carpal and metacarpal articulation of the finger. The body was jaundiced; the liver was large, dark-colored, and softened; the spleen large and soft; the kidneys pale and soft. The cavities of the heart and the connective tissues about the abdominal organs, contained gas; the right pleura contained eight ounces of fluid resembling pus; the left three ounces, and the pericardium two, of bloody serum. There was also subarachnoid effusion, with adhesions.

Gunshot Fracture of Left Ilium, with Destruction of the Hip-joint by an Abscess, which extended around to the Pubis.—The body was jaundiced; the liver very large and soft; the spleen much enlarged. The left pleura contained twelve ounces of pus; the ventricles of the brain were filled with serum, which was also effused beneath the arachnoid, and the latter was opaque and adherent in many places.

Amputation at Knee-joint for a Gunshot Wound of Leg.—There was general anasarca. The left pleura contained two quarts of serum; in the ventricles, and beneath the arachnoid, there was a considerable quantity; and there were adhesions of this membrane. No other lesions were noted at the examination; but as the dropsy was so considerable, it is not improbable that some were overlooked. The case is introduced because the arachnoid adhesions prove that inflammation of that membrane had existed.

Amputation of the Thigh, for a Gangrenous Stump of the Leg.—The right pleura contained twenty-four ounces of a purulent-looking fluid. The right lung was covered with soft lymph; its lower lobe was solidified, and contained numerous small abscesses; there was also an abscess in the posterior part of the left lung. The heart contained fibrinous clots in both ventricles; the liver was large, soft, and light-colored in spots; the left kidney was very much enlarged, pale in color, and contained small abscesses in its lower end; the right kidney was also pale; the femoral vein was inflamed, and contained firm, white coagula, and one was found in the left emulgent vein. There were adhesions and opacity of the arachnoid, with large effusion.

Chronic Diarrhœa.—There was a large, greasy-looking, fibrinous coagulum, six inches in length, commencing in the left ventricle and extending into the aorta. There were six ounces of slightly opaque serum in the left pleura; the lung was adherent to the diaphragm and back of the thorax; the liver large, and fibrous under the knife, its surface mottled, and very dark in spots. The spleen was enlarged; the bowels agglutinated together by peritoneal attachments; the descending colon a fourth of an inch thick, extensively ulcerated; the pia mater congested, the sinuses full of blood; the arachnoid opaque, with numerous adhesions, and serous effusion beneath it and into the ventricles. The body was much emaciated, and spotted with petechiæ.

PHYSICS, BOTANY, CHEMISTRY, AND TOXICOLOGY.

I. PHYSICS.

On the Identity of Physical with so-called Vital Forces.

IN an address to the students of the London Hospital, at the opening of the current medical session, published in the *Chemical News*, February, 1868, Professor LETHBY draws a very sharp line between the possibilities and impossibilities of the application of our knowledge of force and matter. The following will be found especially appropriate, viewed in the light of the experience we have gained during the past few years with regard to epidemic disease :

"We speak of healthy and unhealthy seasons, and in popular discussion are satisfied to refer the pandemic tendency of disease to the state of the weather. But how are they related? The circumstance of a higher or lower temperature than usual, a wetter or dryer season, the existence of more or less ozone in the air, the fluctuations of the barometer, etc., are at present but coincidences of facts; and they offer no explanation whatever of the etiology of disease. The same is also true of the observations which have been made concerning the local peculiarities of epidemics,—as the altitude of a place, the condition of its soil, the water-level in it, and the presence of putrid effluvia. All these, as in the last case, are but dimly seen to have an influence on disease. We know nothing of their real agency, and yet the wildest theories have been advanced in respect of them. At one time it is dogmatically asserted that epidemics are due to wet in the soil; at another to the water-supply of the place. Now it is the condition of the air which causes them, and then it is our filthy habits. Out of this confusion order must come, and the first step must be toward the investigation of the real nature of specific contagia. When this is known, and the laws which govern their action are determined, the caprices of epidemics will be explained."

In regard to forces loosely termed vital, and in the interpretation of healthy phenomena, the Professor remarks that we are not much more advanced. He says :

"The fiction of an Archæus, and the mechanical and chemical theories of life, have given place to the dogma of a vital force; but the recent progress of physical science has done much to dissipate our illusions concerning fictitious entities and mysterious forces. The study of physical phenomena, from a dynamical point of view, has led to the recognition of the fact that there is a definite correlation or mutual dependence of physical forces—that the various imponderable agencies, or the affections of matter, which constitute the main objects of experi-

mental physics, namely heat, light, electricity, magnetism, chemical affinity, and motion, are all correlated, or have a reciprocal dependence; that neither taken abstractedly, can be said to be the essential or proximate cause of the other, but that either may, as a force, produce or be convertible into the other.'

"It follows from this, that there must be some definite relation between food and animal force. Hitherto it has generally been thought that the nitrogenous element of food is the exponent of its value, and that there is a direct relation between the waste of muscular tissue and the amount of work performed. Attempts have, therefore, been made to estimate the relation by observing the amount of nitrogen excreted, as urea, during exercise of different degrees of activity. The results, however, have shown that, under the best circumstances, the actual work performed exceeds that produced by the oxidation of the nitrogenous constituents of the food and worn-out muscle by more than thirty per cent.; and in some experiments which were made in 1866, by Drs. Fick and Wislicenus of Zurich, when they ascended the Foulhorn, which is two thousand feet above the Lake of Brienz, in Switzerland, it was ascertained that the amount of work done in climbing the mountain, exceeded by more than three-fourths that which it would have been theoretically possible to realize from the oxidation of muscle, as indicated by the quantity of urea in the urine. Consequently, they conclude that muscular force is chiefly, if not entirely, derived from the carbo-hydrogen of our food, and that the muscle is no more than the machine for the production of motion. Like a steam-engine, it converts the affinities of the oxidized fuel into heat, and then into visible motion. Like it, also, its movements must cause decay and necessitate repair. The nitrogenous constituents of our food are chiefly concerned in this last process, and it is very doubtful whether as much force is not expended in this process as is afterwards produced by the oxidation of the worn-out tissues. In the consideration of this subject, however, we must not lose sight of the fact that there is a difference between sustained and temporary muscular activity. The herbivora, as the horse, the chamois, the stag, etc., are capable of great temporary exertion, but they are not equal to the carnivora for sustained energy; and with our own domestic animals, we find that they are capable of performing most work when they are supplied with vegetable food containing much nitrogen."

II. BOTANY.

Discovery of Organs of Fructification in the Agaricini.

Professor OERSTED, of Copenhagen, during the winter of 1863-64, made this subject a special study. His observations have been very ably translated in the *Quarterly Journal of Microscopical Science*, January, 1868. Coming from so high a source, the conclusions of Professor Oersted will probably be accepted as entirely trustworthy, and the very much vexed question as to the method of propagation of certain fungi, will be from henceforth less a matter of speculation.

Professor Oersted remarks that "although within the last decade organs of fructification have been demonstrated in so many of the lowest cryptogams, that we are justified in assuming that a distinction of sex pervades the whole plant world, as well as that, as regards the maintenance of the species, fructification is

of the same import for the spore-bearing as for the flowering plants, nevertheless there are whole great groups, especially in the class of *fungi*, in which the organs of fertilization are still quite unknown. This applies to Agaricini, which, on account of their complex structure, their richness of form and variety, take the highest place in the system of *fungi*."

After reviewing the researches of previous investigators, Professor Oersted arrives at the result "that no one has hitherto succeeded in demonstrating organs in the Agaricini, to which in the present state of knowledge of the lower plants, there could be attributed the import of organs of fertilization.

"The consideration of the Agaricini, viewed morphologically, leads to the belief that the whole spore-receptacle (sporehus) must be a result of fertilization; and that thus the organs of fertilization must have their seat in the mycelium, and for several years I have had my attention directed to that organ.

"Experiments in culture were undertaken in order to follow out the development from the germinating spore to the formation of the receptacle, but they did not lead to any successful result, for the mycelium always died shortly after germination. I had only then to go back to nature to seek out the first stages of development of the receptacles, in order to be guided through these to the organs of fertilization; but the difficulty here presents itself that the mycelium is always under ground, and does not easily admit of being brought under the microscope in such a condition that one can get a clear view of the individual filaments. At last I succeeded in getting a clue to an agaric, which contrary to the habits of *fungi*, spreads its mycelium above ground. This is the *agaricus (crepidotus) variabilis*, Pers., which for our present research, presents that very favorable condition, one of the earliest known *fungi*, which has been many times described and figured, but one whose development history has been hitherto the same thing as unknown."

Starting with this form of fungus, Professor Oersted after many difficulties succeeded in obtaining the mycelium in the proper stage of development for microscopical observation, and sums up the result as follows:

1st. The mycelium of this fungus is formed of long dichotomously branched tubular cells, without septa, united into a loose web, and with so thin and soft a membrane that it has almost quite the character of a mucous membrane.

2d. From the mycelium-cells proceed both vegetative organs of propagation, or bud-cells and organs of fructification.

3d. The organs formed as bud-cells, have been previously described as an independent species amongst Hyphomycetes (*Cephalosporium macrocarpum*).

4th. The female organ of fructification is a uniform oogonium, which is curved down against the mycelium filament, whence it originates, with its apex pressed towards it. The male organ of fructification consists of two filiform antheridial-cells, proceeding from the base of the oogonium.

5th. After fertilization, several oogonia in union, give rise to the formation of a receptacle. The oogonia are included in the dense filamentous tissue which forms the first rudiments of the receptacle, without (as it appears) their undergoing any transformation.

6th. The stem is that part of the receptacle which is first produced, afterwards the pileus. This is at first regular, horizontal, and attached to the stem by the middle of the under surface; afterwards it becomes oblique, vertical, and attached to the stem in the neighborhood of the margin.

Professor JOHN GORHAM contributes to the same journal "Observations on a Peculiar Distribution of Vein in Leaves of the Natural Order Umbelliferae."

W. LAUDER LINDSAY contributes to the same journal "Observations on the Polymorphism in the Fructification of Lichens." They will be found more interesting to the professed botanist than to the general reader.

III. CHEMISTRY.

The Influence of Direct Chemical Addition upon the Physiological Action of Medicines.

A correspondent of the *British Journal*, March 7th, 1868, makes reference to a paper upon this subject, read before the Royal Society of Edinburgh by Drs. BROWN and FRASER, from which it appears that, in order to arrive at any accurate knowledge as to the influence which chemical constitution exerts upon physiological action, it would appear to be desirable to take substances having a very definite and energetic physiological action, and then to perform upon them a chemical operation, having for its object the promotion of a definite change in the constitution, and to examine the modification which the physiological action has undergone. Such has been the plan which the authors have pursued; the bodies which they have chosen for examination are the more active of the vegetable alkaloids, and the chemical operation, of which they have studied the effect, has been the direct addition of iodide of methyl. It was shown by How that, when iodide of methyl acts upon strychnia, brucia, morphia, and other alkaloids, it adds itself to them, and beautiful crystalline bodies are produced which differ considerably in character from the salts of the alkaloids. The authors have already examined the physiological action of the bodies produced by the addition of iodide of methyl to strychnia, brucia, morphia, thebaia, codeia, and nicotia.

The iodide of methyl-strychnium is prepared by first treating finely pulverized strychnia with a solution of carbonate of potash in dilute alcohol, and then adding an excess of iodide of methyl mixed with about its own volume of rectified spirit, and digesting in a flask for twenty-four hours. The spirit is thereafter distilled off, the residue dissolved in water, and crystallized. It is well known that doses of strychnia, varying from one-twentieth to one-thirtieth of a grain, rapidly produce in rabbits most violent convulsions, and in a few minutes kill the animal; the phenomena produced being due to a localization of its action on the cord. It was found that twelve grains of iodide of methyl-strychnium, when administered (by subcutaneous injection) to rabbits weighing three pounds, produced no effect whatever. Fifteen grains produced symptoms, and twenty killed; but the animal died with symptoms altogether different from those produced by strychnia. In place of violent and spasmodic convulsions and muscular rigidity, the appearances were those of paralysis with complete general flaccidity. The spinal motor nerves were either paralyzed, or speedily became so; and, instead of the speedy occurrence of muscular rigidity, the muscles remained flaccid, contractile, and alkaline for several hours. In short, by the addition of iodide of methyl to strychnia, the toxic properties of the latter are diminished about one hundred and forty times;

and the body produced possesses the physiological action of curare, viz., paralysis of the end-organs of the motor nerves.

Similarly, Brown and Fraser have discovered that the toxic properties of brucia, thebaia, and codeia are immensely diminished by the addition of iodide of methyl; and that the bodies produced, instead of being, as all three of these alkaloids are, strongly convulsent, possess, on the contrary, the physiological action of curare. Morphia, as is well known, possesses both soporific and convulsent properties; its toxic action is much diminished by the addition of iodide of methyl; its convulsent action is destroyed, but its soporific action remains.

Spectrum Analysis.

The Editor of the *Boston Journal of Chemistry*, May 1st, 1868, gives a very able résumé of our present knowledge upon this subject. He says:

Within the last half century chemistry has advanced with giant strides. By the discoveries made in organic chemistry within the last twenty-five years, a field for investigation has been opened up, almost limitless in extent. But in no respect is progress more strikingly shown than in that beautiful application of previously known facts, which forms the subject of the present article. Spectrum Analysis has been created within the last decade; yet already, by its means, new elements have been discovered, and the bounds of chemistry enlarged so as to include the determination of the composition of the sun and stars, and the solution of astronomical and cosmical problems of the highest importance.

Newton first carefully examined the prismatic spectrum, and upon observations founded his theory of colors. Wollaston, a hundred years later, noticed that the solar spectrum was not, as supposed, continuous, but was crossed at right angles by numberless dark lines or bands. Fraunhofer was the first who carefully examined these lines. He described and mapped a large number of them, which have been called from him, "Fraunhofer's lines." He found that the lines varied in breadth and strength; but their relative positions remained unchanged when the source of light was the same, no matter what kind of prism or refracting agent he used. Sir J. Herschel was the first to examine, with the prism, flames colored by metallic salts, and to point out their availability for analytical purposes. Others made similar observations. But to Kirchoff and Bunsen is due the credit of having constructed, upon the basis of the observations of the spectra of flames colored by metallic salts, a method of qualitative analysis of extreme delicacy and beauty. They contrived an instrument called the spectroscope, for observing these spectra, and comparing them with one another.

The spectroscope consists essentially of a stand supporting a prism, usually of flint-glass, and three brass tubes. One of these tubes is a telescope, through which the observer looks; one of the others has, at its farther extremity, a narrow horizontal scale formed by transparent lines on a dark ground; through the third, the light under examination passes. The first two are equally inclined to one face of the prism; the last is opposite the other face. The lines of the scale are seen by reflected light, simultaneously with those of the spectrum, the lines of which can therefore be read off in divisions of the scale. Within the last two or three years spectroscopes of great power have been constructed, having as many as nine prisms; but their use calls for great care and skill, and, for almost all purposes, much simpler ones are perfectly satisfactory.

The alkalies and alkaline earths were the first substances Kirchoff and Bunsen examined by the spectroscope. The spectrum of sodium is characterized by a broad, intense yellow line. This reaction is extremely sensitive, as by it $\frac{1}{2500000}$ th of a grain of sodium can be detected. The potash spectrum is recognized by two lines, one in the red and the other in the indigo. The spectra of the alkaline earths are equally characteristic, but somewhat more complicated. Those of many of the metals are excessively complex, some having as many as fifty, sixty, and even five hundred lines. The spectra of the metals have been very carefully examined, mapped, and their characteristic lines marked, so that an observer acquainted with them, or having the map before him, can in an instant ascertain the presence of perhaps half a dozen different elements in the substance he is examining. The accuracy and rapidity of this process is truly wonderful, and the field for investigation that it presents seems almost boundless. The spectra of the non-metallic elements have not been so thoroughly examined, and are not so well understood as those of the metals. Some of the former seem to give different spectra at different temperatures. It is very probable that further investigation of these anomalies may yield us some information about their molecular constitution.

On the Instability of Solutions of the Alkaloids.

Dr. BOURDON, physician to the Hôpital de la Charité, contributes an article to the *Bulletin Général de Thérapeutique*, for April 30th, 1868, in which, after stating that his attention had been drawn to the subject by the failure of some solutions intended for hypodermic injections to produce the expected effect, he gives in detail some experiments made to determine the cause of this failure. There were always found in these cases filaments of microscopical growth; and he found that the loss of strength was due to two causes,—1st, to the deposition of a portion of the salt on the organized materials in the form of crystals, which remained on the filter when the liquid was filtered preparatory to use; and 2d, to the decomposition of the organic salt by the vegetable growth in the process of its formation; this growth laying hold on some of the elements of the alkaloid necessary for its own development. The 2d he found, by experiment, was the principal cause. In one case where a solution of muriate of morphia, 1 part to 25, had been kept very long, and filtered two or three times, only 1 part of the salt in 50 was left. In another, a solution of sulphate of quinia 1 part, and tartaric acid $\frac{1}{2}$ a part to 20 parts of distilled water, lost in ten months one-fourth of its saline constituents, although on filtration only two small crystals, one-fourth or one-sixth as large as the head of a pin, were found adhering to the vegetable growth on the filter. Dr. Bourdon claims originality for his observation as to the adherence of these crystals. The other cause of loss of strength in the solution had been previously observed in the case of atropia by M. Gubler, and the fact is noticed in the *Dictionnaire Encyclopédique des Sciences Médicales*, article ATROPINE.

IV. TOXICOLOGY.

Ready Method for the Detection of Phosphorus, Arsenic, and Antimony.

Dr. DANIEL MÜLLER publishes in the *Berliner Klinische Wochenschrift*, 23d March, 1868, a very simple and expeditious method for the detection of these popular poisons.

The majority of practising physicians have neither the time nor exact chemical knowledge to make an elaborate analysis in any suspected case, but this is no reason why they should make none at all, especially when, by a moderate expenditure of time, a satisfactory conclusion can be reached.

The apparatus for the detection of phosphorus consists of a small flask of about 100 cubic centimetres capacity, furnished with a cork, which latter contains a small glass-tube about 85 centimetres long and 3 millimetres in diameter. To use it, we have only to place in the flask the suspected contents of the stomach, and add a little water, so as to fill the body of the flask about one-third or one-half full, then heat *very gradually* to boiling, and, if any phosphorus be present, it will exhibit its well-known reaction. When the flask is carried into a dark room, a tremulous, quivering light will be seen in the tube, and, if the quantity of phosphorus is somewhat large, the light will dart through the tube in bright flashes. Where the quantity is small, only an occasional spark will be seen, resembling very much the ordinary electric spark. By means of this simple contrivance, the phosphorus contained in the 100th part of an ordinary lucifer match, can be immediately demonstrated.

In case there is but a small quantity of fluid for examination, too much care cannot be taken to guard against fracture of the flask and consequent loss of contents, and it would be advisable, in these cases, to employ a sand-bath.

If the experiment is so conducted that the vapors shall be condensed and allowed to flow back into the flask, the reaction can be watched for hours.

The apparatus for the detection of arsenic and antimony is still simpler, being, in fact, nothing but a portable contrivance for the ready application of Marsh's well-known test. It consists of a small test-tube about 15 centimetres capacity, fitted with two stoppers: one to prevent spilling of the fluid in carrying, and the other containing a glass-tube bent at right angles and drawn to a point, for the application of the test. The tube contains dilute hydrochloric acid. A few pieces of zinc, free from arsenic, complete the apparatus. The first thing to be done, is to demonstrate, to a certainty, that the whole apparatus is free from arsenic, by dropping in a few pieces of the zinc, and when the resulting hydrogen gas is being evolved quite freely, to insert the second cork containing the glass-tube with small opening, set fire to the gas, and direct the jet against a piece of white porcelain; if no spot is produced, the apparatus is free from arsenic and antimony. This contrivance is, of course, not intended to replace the more elaborate apparatus of the laboratory, but it is proposed simply to enable one to settle any doubts that may arise in a given case, *on the spot*, with a moderate amount of certainty. The test can be applied in a few minutes, and, when properly used, will reveal the presence of the 10,000th part of a gramme of arsenic or antimony.

Poisoning by Phosphorus—Death on the Sixth Day.

Professor TAYLOR details a case in *Guy's Hospital Reports* for 1868. The patient was a child 13 years of age, dying under somewhat suspicious circumstances. A medical attendant, called in a day or two before death, was misled, by the predominance of brain symptoms, into giving a certificate of death from arachnitis. The body, however, was subjected to a most rigid examination after death, and the viscera sent to Dr. Taylor for analysis. The main post-mortem appearance observed, was fatty degeneration of the liver; this, and the circumstance that the girl was supposed to have taken some phosphorus rat-poison, led Dr. Taylor to believe that the cause of death was poisoning by that substance. A very careful trial of Mitscherlich's process failed, however, to detect the slightest evidence of the presence of phosphorus, a circumstance which Dr. Taylor attributes to the absorption and destruction of the *free* phosphorus in the blood. The viscera were not subjected to analysis until fifteen days after death. Dr. Taylor lays great stress upon the fatty degeneration of the liver, as symptomatic of phosphorus poisoning, where death takes place slowly, as is usually the case, the poisonous effects depending upon absorption of the phosphorus by the blood.

Dr. FINNELL, in Transactions of New York Pathological Society (*Med. & Surg. Reporter*, December 14th, 1867), gives a case in which death occurred very rapidly. The patient (a woman), took a half-box of ordinary lucifer matches, poured boiling water upon them, and drank the resulting infusion. She died six hours afterward, evidently from inflammatory action, as the stomach was greatly congested, and showed numerous patches of intense redness. The remaining organs were not examined.

Case of Poisoning by Cyanide of Potassium—Recovery.

Professor TAYLOR relates a case in *Guy's Hospital Reports*, for 1868. It occurred, as these cases usually do, to a photographer. The amount taken was estimated to be about three to five grains, dissolved in about two drachms of water. Immediately after swallowing it, he discovered his mistake, and had the presence of mind to follow it with about a half ounce of saturated solution of protosulphate of iron, and then hastened to a chemist's, in the neighborhood, and took a mustard-emetic, which latter produced a tardy and incomplete emesis; so that it is altogether probable that he owed his life to the prompt administration of the sulphate of iron, which converted the cyanide and free hydrocyanic acid into insoluble Prussian blue. Three grains of cyanide have been known to produce death, especially when dissolved in water, where the conditions for rapid absorption are extremely favorable.

Experiments Illustrating the Direct Action of Hydrocyanic Acid.

Professor JOSEPH JONES, of the University of Nashville, gives the result of ten experiments, in the *New York Medical Record*, December 16th, 1867. The animals selected were ten young alligators (*Alligator Mississippiensis*), of the same age and from the same nest.

The solution of prussic acid employed was freshly prepared, and of the strength of the *acidum hydrocyanicum dilutum* U. S. P.

The following is a summary of the manner of application of the poison :

Experiment 1.—Prussic acid administered by the mouth.

Experiment 2.—Brain of alligator exposed, and prussic acid applied.

Experiment 3.—Prussic acid applied to spinal cord in tail of young alligator.

Experiment 4.—Prussic acid applied to spinal cord, midway between anterior and posterior extremities.

Experiment 5.—Poison applied to spinal marrow, midway between anterior extremities and base of the brain.

Experiments 6, 7, 8, 9, 10.—Poison applied to brain and medulla oblongata.

From these experiments, Professor Jones concludes that prussic acid acts primarily, directly, and chiefly upon the medulla oblongata and spinal cord; and that its ability to produce sudden death, is dependent upon its action upon the medulla oblongata.

Derangements in the relations of the medulla oblongata and spinal cord, to the muscular system generally, and especially to the respiratory system, are the first phenomena manifested in the action of prussic acid. When absorbed from a raw surface, or from the stomach and bowels, these phenomena are manifested, as well as upon the direct application of the poison to the medulla oblongata—but more slowly. In warm-blooded animals death takes place almost immediately after the administration or inhalation of the poison. Still, when taken by the mouth, a sufficient time always elapses for the absorption of the poison and its distribution to the great nervous centres. As soon as the poison in the blood reaches the medulla oblongata and spinal cord, convulsive movements are excited, and if the impression be sufficiently intense, there is an immediate arrest of the action of the ganglionic cells, presiding over the respiratory process, and immediate death follows.

In the young alligator, the cartilaginous walls of the cerebro-spinal system can be readily removed by the knife, and we are thus enabled to apply the poison to successive portions of the nervous system, and thus demonstrate the immediate and direct action of the poison upon that portion of the cerebro-spinal system, which presides over respiration and the reflex actions. Prussic acid, as we have satisfactorily demonstrated by numerous experiments, acts also upon the blood and upon the muscular fibres, and the sympathetic nervous system; but, as has been conclusively shown by the foregoing experiments, the most marked phenomena, and those disturbances which induce death by interference with respiration, are due to the direct action of the poison upon the medulla oblongata.

Poisoning by Mushrooms.

Dr. THOMAS LOGAN, of San Francisco, communicates an article on the foregoing subject to the *Pacific Medical and Surgical Journal*, April, 1868. The chief peculiarity of the paper, is the attempt made by the author to prove that the poisonous influence exerted in the case of mushrooms, is due to the proliferation of their sporules within the organism. He here follows in the footsteps of Professor Salisbury, and appears to be a devoted disciple of the seductive but untenable sporule theory of that ingenious gentleman, whose latest achievement is the discovery of "sporules," causative of syphilis. A portion of the paper is devoted to general remarks upon fungi, after which the case in point is given.

On Friday, 10th January, 1868, at about 4 P.M., Mrs. Tully and her three children

ate with their supper, which consisted as usual of dried codfish and potatoes, two small mushrooms, about one and a half inches in diameter of the *pileus* or cap, which had been gathered by the children in a neighboring lot, brought home and cooked by them very hastily upon the stove. The mother states that she did not examine the mushrooms, but was under the impression that they were the well-known esculent species, and that she merely drank the juice, while the children divided and ate the mushrooms between them. Neither the mother nor the children had perceived any bitter, acrid, or disagreeable taste.

In the course of the following morning, Saturday, one of the children, George, aged nearly nine years, complained of some pain in his stomach, for which his mother administered a dose of senna tea. Steadily as the day advanced, however, the distress in the abdominal region increased, while thirst and headache, with occasional vomiting and purging, developed themselves. About bed-time, Saturday night, the youngest child, Sarah Jane, five years old, commenced complaining of her stomach, vomiting and purging also two or three times during the night; and some time after bed-time, the eldest girl, Delia, aged ten years, began to exhibit similar symptoms. On the next morning, Sunday, Mrs. Tully feeling rather unwell herself, and finding the children's sickness persisting, began to suspect the mushrooms eaten on Friday as the cause, and by the advice of an intelligent neighbor, administered an emetic of ipecacuanha to the three children.

Soon after this, George's symptoms becoming rapidly more alarming, a little brandy and water was occasionally administered, but without any benefit; and convulsions setting in, medical aid was sought. At about half-past 1 p.m., Sunday afternoon, I was called upon by Mr. Tully to visit his family without delay. Although making all reasonable haste, it was some thirty or forty minutes more before I reached the distant residence. On entering the house my attention was immediately called to the boy, who was just coming out of a violent convulsive paroxysm, and vomiting a whitish serous fluid, resembling the ejecta of cholera. His face was of a livid red color; pupils enormously dilated and responsency to light lost; head hot and feet cold; pulse 130, small and irregular; tongue and lips rather livid, but moist and cold; abdomen tumid and tympanitic; respiration quick, broken, and sibilant; action of heart disturbed, and the rhythm and force of its contractions modified. The warm bath having been already resorted to without any benefit, I now ordered sinapisms to the epigastrium and extremities, bottles of hot water to the feet, an enema of warm soap and water, and as soon as consciousness was restored, administered spts. ether comp. f 3j,—which I happened to have with me,—in a little sugar and water. These efforts, however, were all in vain, another convulsion set in, and the boy expired about ten minutes after the doctor's arrival.

The youngest girl was treated in the same manner, and though vomiting and purging still continued, there was a manifest amelioration of the graver symptoms. The oldest girl also showed symptoms of improvement under the same treatment. When symptoms of reaction appeared, the Doctor prescribed a mucilaginous mixture of phosphate of lime, to allay the vomiting, and ordered a drink of gum-water "*ad libitum*," to assuage the thirst. "About this time," says the Doctor, "I thought I detected on the surface of the urine, of some two or three hours' standing, which was passing rapidly to putrefactive fermentation, the small white cottony flocks, answering to the description of the spore-bearing threads of *Salisbury*. Although, unfortunately, no other opportunity offered to satisfy myself on this point, I never-

theless shaped my treatment accordingly. Adopting now the views of this writer respecting palmeloid poisoning, and in order to brace up the system of my patients until nature could effect her cure by eliminating what I now conceived to be cryptogamic poisoning, through the skin, mucous surfaces, and kidneys, I prescribed a mixture, glycerole quiniæ ʒij; spts. ether nit. f ʒss.; aqua camph. f ʒiiiss., to be given to both children by teaspoonfuls every two hours, with the continued free use of gum-water and cold milk, *ad libitum*, for sustenance.

"At my evening visit I found both my patients doing well; the bowels had been two or three times evacuated, and the other excretions were abundant. They had partaken freely of milk, and the elder had asked for some bread, which was allowed. The younger girl was disposed to somnolency, apparently from exhaustion. I directed a continuance of the morning treatment."

The remainder of the history is comparatively uninteresting; the patients progressed slowly to recovery. The mother who drank of the juice only was but slightly affected. The Doctor attaches great importance to the long period elapsing between the swallowing of the mushrooms and the development of the symptoms, and upon this founds his idea of "sporule proliferation." He says, "I feel confident, from a review of all the circumstances—the tumid condition of the abdomen—the livid appearance of the contours of the eyes and mouth—the torpor of mind and muscular debility—the congested state of the brain and lungs—the deep impression on the nervous centres—and particularly in the boy, the peculiar condition of the tongue and buccal mucous membrane, and the slightly ecchymosed, yellowish hue of the surface, especially of the most dependent parts, after death—that there was a deficient supply of fibrine to muscular tissue, and of red globules. The poison impinging primarily on the epithelial tissue, tended to the derangement of those portions which are the most actively engaged in organizing nutrient products, as the spleen, mesenteric glands, etc. Consequently the condition of the circulatory vessels, fed by these organs, became one closely allied to embolism—a choking up with plastic fibrine, adhesive corpuscles, and products of mycelia—the fertile threads of which latter, as noticed in the urine, were indicative of the presence of glycogenic matter and rapid fermentative changes."

In this connection the opinion of Professor Heller, upon the subject of mushroom poisoning, as published in the *Wiener Medical Presse*, 26th January, 1868, *Verhandlungen K. K. Gesellschaft*, will be of interest. Professor Heller remarks, poisoning through mushrooms is no rarity, and is almost always discovered by accident, or a consideration of the surrounding circumstances; but never thus far has the poisonous principle been demonstrated in suspected food, contents of stomach, etc. The numerous experiments of Orfila were made more with a view to determine the nature of the symptoms, than the detection of the poisonous principle. Dr. Heller has for some years back chemically investigated the several varieties of mushrooms, and ascertained that the poisonous principle can be isolated in some varieties of *Agaricus*, and especially in the *Ag. piperatus*, *Ag. acer*, *Ag. hyrogallus*, and others. These varieties are abundantly found in the mountainous regions in the vicinity of Vienna. The Doctor exhibited a specimen of the isolated poisonous principle. When placed upon the tongue it produces a sharp, burning sensation, which continues for some time. The Doctor related a case where seven persons partaking of vermicelli soup, in which mushrooms had been cooked, were taken with vomiting and dizziness while eating the soup. Seeing that the sporules in this case were pretty thoroughly boiled, and that the symptoms

set in almost immediately, the idea of proliferation is insufficient to account for the appearance of the morbid phenomena; while the isolation of the poisonous principle, by a chemical process (the details of which we regret are not given), is equally opposed to the general application of the ingenious pathological conclusion of Dr. Logan.

Recovery after Wounds caused by Arrows dipped in Curare.

Dr. FERREIRD DE LEMOS has had an opportunity to investigate this somewhat rare form of wound, and communicates the progress of the cases in the *Deutsche Klinik*, January 11th, 1868. D'Manuel Rowand y Paz Saldan, a young man, twenty-eight years of age, of average health, was appointed secretary of the commission to regulate the boundaries between Peru and Brazil. While traversing the tributaries of the Amazon, they went beyond the bounds of civilization, and were attacked by a band of Muyurunas and Connivas. In the struggle which ensued, they were compelled to abandon their largest boat containing their provisions and baggage, and betake themselves to a small boat scarcely large enough to contain the party. Several of them were wounded. One who received three wounds in the abdomen died after the most fearful suffering, in less than four hours. Five of the sailors, who were but slightly wounded, and knowing the nature and danger of the wound, drank salt water and also thoroughly washed the wounds with the same. The salt acted as an antidote and they soon recovered.

Paz Saldan received three wounds, all of which were attended with free hemorrhage. A few moments after the reception of the wound, he felt powerful constriction of the throat. The sight became dim, and it seemed as if his right eye would force itself from its socket. He was unable to elevate the upper lid of the right eye. These symptoms were followed by tetanic pains in the spine, convulsive movements of the muscles, especially those of the lower extremities, and obstinate constipation, which latter continued for sixteen days. There was retention of the urine for the first eight days. The small portion passed during this time was of a deep-red color.

The Doctor first saw the patient thirty-six days after the accident, November 15th, 1866. He was then very weak, but in good spirits, and had a fair appetite and slept well. The wounds of the left hand,—all of which were on the region of the thumb,—were now cicatrized. The muscles of the thumb were atrophied, the hand could not be fully closed and was much weaker than the other. The internal and upper surface of the hand, were of a bluish color, probably arising from paralysis of the vasomotor nerves. The patient alleges that when wounded in the left hand, he felt the same sensation in the right hand, at a corresponding point. The second wound, superficial, upon the upper and inner surface of the calf of the right leg, had already cicatrized. The third and most important wound, situated on the upper third of the calf of the same leg, was in a fistulous condition. A few days after reception of this wound, a piece of wood (the point of the arrow), was discharged. In sounding the wound the Doctor discovered that the arrow had penetrated from below and passed upward toward the joint. The probe in passing upward came very close to the articulation, and on being withdrawn was followed with pus mixed with blood. The whole calf of the leg and the foot were very much swollen. The patient complained of severe pain near the internal malleolus, but was otherwise free from pain. The leg was simply bandaged. At

midnight of the same day, the patient was seized with violent hemorrhage, losing probably some three pounds of blood before the tourniquet was applied. The next morning the patient had rallied and appeared as well as before the hemorrhage. He then informed the Doctor that he had had a similar hemorrhage on the day of the accident, and another some twelve days after, while still confined to his bed. On both these occasions the bleeding ceased of itself. The wound was again probed after the patient had somewhat gained his strength. At this time it was found that the pus was forcing its way downward, forming a large collection in the middle of the muscle and extending down nearly to the malleoli. The Doctor then concluded that amputation was unavoidable, but decided to wait until the patient should gain in strength. During the next eight days nothing noteworthy occurred.

During the night of the 26th of November the patient was awakened by a fire in the neighboring house, and the fright brought on another exhausting bleeding. This made the fifth hemorrhage since the 10th of October, the day when the wound was received. It is somewhat remarkable that the bleedings seemed to be periodic, occurring about every ten days. Since the 26th November the condition of the patient has entirely changed; his former lively spirits, his quiet sleep, his good appetite are gone, and delirium has set in.

On the 2d of December, as the patient was growing worse, and still occasionally losing blood, it was decided to lose no further time, and amputation was performed at the thigh. On examining the leg there was found an aneurismal enlargement of the posterior tibial artery and vein. Recent and old coagula filled up the vessels, and fistulous canals had coursed their way through the muscle at various points as far down as the malleoli. Recent collections of pus had also formed in the deep muscular layers down to the interosseous ligament.

On the 7th of February the patient had entirely recovered. The strength was completely restored, and the ptosis of the eyelid had entirely disappeared, as well as the bluish color of the left hand, which, however, still continued weaker than the other. The atrophy of the muscles of the thumb was now scarcely to be observed.

The Micro-spectroscope as a Test for Strychnia.

WILLIAM FRANK SMITH, Esq., of Sheffield, regards the micro-spectroscope as a reliable and useful test for strychnia. In a letter to the *Lancet*, March 7th, 1868, he says:

“A crystal of strychnia is dissolved in a little strong sulphuric acid, and placed in a Sorby's cell; a few drops of a dilute solution of potassic ferridcyanide in the same acid are added, the cell covered with thin glass, shaken, and placed on the stage without a moment's delay. A very fine absorption band immediately below—i.e., nearer the red than the double band of scarlet blood (which may be kept as a comparison object)—appears. In from ten to thirty seconds this band fades away, and after an interval of about a minute is succeeded by a second band immediately above the blood band alluded to. This second band becomes more and more distinct, and is permanent. It is not in itself characteristic.

“Neither brucia, atropia, aconitina, morphia, quinia, nor salicin gives this reaction.

“Curiously enough, however, the beautiful blue solution obtained by acting

upon a solution of the red pigment of bile (separated from bile by agitation with chloroform) with chlorhydric and nitric acids, gives a similar spectrum passing through similar changes. It would be very interesting could it be shown that the bitter principle of the bile was an alkaloid allied to strychnia. This would explain how morphia, which is said to retard hepatic excretion, induces cutaneous hyperæsthesia, and sometimes tetanic convulsions."

Iodine as an Antidote to Strychnia, and the Incompatibility of Quinia and Strychnia with Tincture of Iodine.

HENRY WILLIAM FULLER, M.D., communicates to the *Lancet* of March 21, 1868, what he apparently regards as a discovery, viz., the incompatibility of strychnia and quinia with tincture of iodine, and therefore suggests as an antidote in cases of poisoning by strychnia diluted tincture of iodine. He had occasion to prescribe a mixture containing a drachm of liquor strychniæ, two drachms of dilute hydrochloric acid, and two drachms of tinctura iodini. The result was that a dark flaky precipitate was formed, and the whole of the strychnia was precipitated. So far Dr. Fuller confines himself to the simple statement of facts, but not content with this, he ventures the remark that "neither in Dr. Taylor's work on Poisons, nor any other work which I have had the opportunity of consulting, do I find the slightest reference to iodine as an antidote to strychnia." Subsequent communications would seem to prove that the Doctor's memory is slightly impaired, or his library somewhat limited. In the *Lancet* of April 4th, Dr. Stokes Guppy refers Dr. Fuller to *Pereira's Materia Medica*, where, under the article "Nux Vomica," he will find Donné regards iodine and bromine as antidotes for strychnia. David Everett, Esq., in the same number says that "iodine was long ago proposed as a possible antidote for strychnia, and I suppose that the fact of an insoluble compound resulting from the combination of the two substances had been noticed by Dr. Thompson." In the *Lancet* for April 11th, 1868, J. M. Fothergill expresses his delight that Dr. Fuller has "*drawn attention*" to the relations of iodine and strychnia, and then goes on to state that he has been cognizant of the fact for some years past, which is a very mild way of saying that Dr. Fuller has succeeded in unearthing a mare's nest of tolerably large dimensions. In the *Lancet* for April 25th, 1868, the final touch is applied as follows:

IODINE AN ANTIDOTE TO STRYCHNIA.

To the Editor of the *Lancet*.

SIR: On reading Dr. Fuller's article on the precipitation of strychnia, when in solution, by the tincture of iodine, I felt sure that I had not only read of that before, but had also read an account of a case of poisoning by strychnia having been successfully treated by iodine.

In Guy's *Forensic Medicine*, page 494, it is stated that iodine and iodide of potassium, in solution together, form a valuable test for the alkaloids as a class, and for strychnia in particular, producing in solutions containing strychnia an abundant yellowish or reddish-brown precipitate, partly amorphous, partly crystalline.

In the *New Sydenham Society's Year-Book of Medicine and Surgery* for 1859, is an epitome of a case of poisoning by strychnia, successfully treated with tincture of iodine, by Bennett, after emetics had failed. The same case is more fully described in the *Lancet* of that year (vol. ii, p. 434).

EDW. ABLETT.

WHITEHAVEN, April 11, 1868.

To the Editor of the *Lancet*.

SIR: If your readers will turn to the *Lancet* for 1866, vol. i, p. 249, they will there find the following account of iodine and the alkaloids by Dr. Brown-Séquard, "On Antagonism between Certain Remedies:"—"Bouchardat has shown that almost all, and perhaps all, the known alkaloids are precipitated by the iodide of potassium combined with iodine."

HOUSE-SURGEON.

Iodine not an Antidote to Strychnia.

Mr. S. DARBY, in the *Lond. Pharm. Journal*, of May, states the results of his experiments as to the relations of iodine to strychnia; his attention having been called to it by the suggestion of Dr. Fuller, in the *London Lancet*, of March—to the effect that, as a solution of strychnia was precipitated by iodine, producing (as he claimed) an insoluble compound, iodine might prove to be an antidote. Mr. Darby, after carefully collecting the precipitate formed by mixing the "solutions" of these drugs of the British Pharmacopœia, and washing it with distilled water, gave from $\frac{1}{4}$ to $\frac{1}{2}$ grain to a strong, full-grown cat,—convulsions, with intense rigidity of the back, and death, in ten minutes, were the results. Digesting the precipitate for three hours in distilled water, at the temperature of 90° F., and then filtering, produced a filtrate of a very decided bitter taste, yielding, on evaporation, a yellow residue, soluble in a small portion of distilled water, which was rendered intensely bitter. Another portion, digested in the same way, with one part dilute hydrochloric acid, and three parts distilled water, produced much more decided results. The solubility of this substance would therefore be increased by the acids of the stomach. Mr. Darby says: It is still open to proof, whether by inhalation or subcutaneous injection, iodine, either *per se*, or in combination (as iodoform), may not exert some controlling influence over the tetanic convulsions caused by strychnia.

Prussic Acid as an Antidote for Strychnia.

Mr. F. M. RIMMINGTON, under this somewhat imposing title, relates an uncertain dog story in the *Lancet* of February 22d, 1868, from which it appears that some evil-disposed person poisoned (?) a gentleman's dog, and from the symptoms (tersely described as "severe spasms"), it was concluded that strychnia had been given. The gentleman deeming it a hopeless case, sent to a druggist for a dose of prussic acid, to terminate the animal's sufferings. He gave it, and "*mirabile dictu*," the dog "*at once*" began to improve, and was shortly afterwards running about. How much all this proves, and what it proves, we confess ourselves unable to determine. But subsequent contributions, upon the same subject, relieve us from that responsibility. Mr. Pierce follows in the *Lancet*, for March 7th, with a communication, where a favorite cat was the recipient of the antidotal effects of prussic acid, after being poisoned with *something* that produced "tetanic spasms of the trunk and extremities, and convulsive movements of the eyeballs." He says: "I administered a dose at a neighboring chemist's, when a rapid, copious, and almost instantaneous action of the bowels followed. The animal seemed to be much exhausted in consequence; but, after an hour's rest, appeared to have recovered from the effects of the poison, with the exception of slight irregular

contractions of the muscles of the head (the right side and corresponding eyeball more than the left) and fore-legs. These gradually subsided in from three to four days, and the cat has continued quite well ever since. I regret that I cannot recall the exact amount of (Scheele's) acid given."

But, *per contra*, Mr. Gentles, in *Lancet*, April 7th, very sensibly concludes that "there is a little obscurity in Mr. Rimmington's case, as related in your impression of February 22d. I am afraid the poison (?) administered to the dog could not have been quite so powerful a one as strychnia, seeing that some little time must have been lost: first, in looking at the dog whilst in the fits; and, secondly, in going to and from the druggist's for the prussic acid. Could Mr. Rimmington give the exact time which elapsed from the administration of the poison, to the exhibition of the antidote, it would go a long way toward making the case complete. In the absence of all direct proof that poison was administered to the dog, might I be allowed to suggest that it is just possible the spasms from which the animal suffered might be those which are vulgarly called 'dog-fits,'—a species of epilepsy, I presume."

Poisoning by Alcoholic Extract of Belladonna.

H. A. DUBOIS, Assistant Surgeon U. S. A., took, through mistake, five grains of Squibb's alc. ext. belladonna, at 11 P.M., on the evening of December 28th, 1866. He describes the result in the *New York Medical Record* (December 2d, 1867).

Until 8 A.M., the next morning, nothing peculiar was noticed. On endeavoring, at that time, to dress, he found that he had great difficulty in controlling muscular movement, and staggered about at random, unable to support himself. He managed, however, to get on his clothes, and, prompted by a sense of duty, finally reached the surgery, and endeavored to prescribe for the sick. He now discovered that he was unable to read the names on the sick-report, the page appearing perfectly blank. Not seeing any names on the report, he asked the steward the reason, and then discovered that he was unable to control the movements of the tongue. Being informed that the names were really there, he endeavored, by a strong impulse of the will, to ascertain the cause of his strange disability. His first thought was that he was drunk; but not having indulged the day before, this primary diagnosis was rejected by exclusion. He then recollected that he had taken medicine the night before, and came to the conclusion that his steward had given him pills of belladonna, instead of ext. of colocynth, as he had ordered. Having determined the nature of his disability, he made up his mind to continue to prescribe for the sick—though he could neither see, speak distinctly, nor stand steadily. The names were called by the steward, and, as they made their appearance before the Doctor, he could distinguish their outline, but could not recall their features. The name he remembered, and the disease of the patient. In each case the Doctor continued the prescription, afraid to trust himself in prescribing; and, in this way, finished his morning duty. He then returned to his room with a brain whirling, a dull, heavy pain in the back of the head, and the mind wandering, from time to time. The utmost exertion of the will was required to keep the mind fixed upon any one point. He tried to remember the smallest fatal dose of the extract of belladonna, and to recall the symptoms of poisoning from that drug, and the best method of treatment. He settled upon strong coffee; then coffee and whiskey; then half-grain pills of morphia sulph. This treatment relieved the gid-

diness, and the mind ceased to wander. He now tried to examine his eyes in a glass, but could only see a dim outline. By going across the room, and then looking at the glass, he was able to discover that the pupils had so expanded that no iris was visible. While the vision was most impaired, he could distinguish objects at a distance nearly as well as ever; though, if he looked attentively, the effort became exceedingly painful.

The arms and legs were numb and cold to the touch, and required great effort of the will to regulate their movements with any degree of precision. By noon (four hours after beginning of poisoning), he was able to visit and prescribe for some twenty patients, but returned, greatly exhausted. This state continued all the afternoon and evening. He passed a sleepless night, the mind being filled with vague and misty visions. After two days, the pupils contracted to their normal size, but the reading of the simplest book caused intense pain in the back of the head. The action of the brain became very slowly normal; not even a moderate amount of mental exertion could be exercised without being followed by fatigue and pain in the back of the head. It was two months before these symptoms entirely disappeared. The usual symptoms of dryness in the throat, colicky pains in the bowels, etc., were also present. The Doctor very properly regards as the chief point of interest in his case, the control the will seems to have had over the cerebrum, constantly bringing the mind under control, and holding it to its work, and in the remembrance of things and their appearance, seen with a brain and through optic nerves poisoned with belladonna.

Poisoning by Datura Stramonium—Recovery.

Dr. D. MCGILLIVRAY, attending physician to the Ottawa, Canada, General Protestant Hospital, reports, in the *Canada Medical Journal* for May, as follows: "October 17th, 1867, was summoned in haste, and responded immediately, to see a child, fat, stout, two years and three months old, and had always enjoyed good health. Found sufferer lying prostrate and helpless on its mother's knees. Suspecting poisoning, made inquiries about what he had taken, and was handed a portion of the pod or fruit of the Thorn Apple which he had found in the garden, and of which he had eaten freely about an hour before. This at once revealed the cause of the mischief. The following symptoms were clearly noticeable: pulse 85, very weak; eyes open, pupils dilated to the utmost; face and neck flushed and greatly swelled; head moderately warm; lower extremities flushed and very warm; this redness was more marked in the anterior region of the thighs; he appeared very restless and agitated, stretching himself at full length, throwing his arms and legs about, and sometimes seizing his neck with both hands; would not answer questions; vision imperfect; voice weak; could swallow water, but with great difficulty; tongue and fauces dry and slightly swelled; perspiration copious; nausea and retching.

"*Treatment.*—I immediately administered tartar emetic and vin. ipecac., which induced free emesis in about a quarter of an hour. In the matters vomited I counted seventy-six seeds, with portions of the fruit of the Thorn Apple. As soon as the vomiting ceased, ordered brandy and water—a teaspoonful of each every half hour, and, as the child appeared to be very thirsty, I ordered a strong decoction of green tea to be made and given as a drink every two hours, or oftener if required. This treatment was continued for five hours, when the symptoms

began to abate. Pulse fuller and stronger, no alteration in its frequency; face less flushed and swelled; lower extremities warm; less redness of skin below the knees; voice louder; swallows better; less nervous agitation; skin of body moist and warm. It being at this time eleven o'clock at night, told the mother to pursue the same treatment, to give the brandy and tea at longer intervals, and give three teaspoonfuls of castor oil.

"18th. Found him decidedly better, very easy and quiet, and strongly inclined to sleep; will answer questions; voice stronger; swelling and redness of neck and face entirely disappeared; no redness of lower extremities; is able to walk; pupils partially dilated; complained of headache; during the night had little sleep; bowels relaxed; passes urine freely; pulse 80, no inclination to eat any food; still thirsty; ordered the brandy to be discontinued and to give the tea as often as required.

"19th. Is convalescent and doing well; slept well during the night; appetite good; bowels regular; pulse regular, 80; pupils not over-dilated. Evening: appears quite well and walking about."

Death following the Administration of Two-fifths of a Grain of Elaterium.

Dr. A. G. CRAIG, M.D., of Ghent, Kentucky, communicates to the *Western Journal of Medicine*, the history of a case of anasarca and abdominal distension, dependent upon heart and liver disease, in which he gave two-fifths of a grain of elaterium to induce hydragogue catharsis. The patient was quite feeble, the pulse 100, the breathing slow and labored when he gave the remedy. At four o'clock in the afternoon of the same day he was again called to her bedside, and was informed that a few minutes after she had taken the medicine she commenced purging, and had had a dozen or more watery stools before his arrival. She was greatly prostrated, could only speak in a whisper, and as he approached her she took him by the hand and said: "Doctor, I fear you have killed me." Her pulse was scarcely perceptible. Commenced at once with the administration of stimulants and small doses of opium, combined with the acetate of lead. Her bowels were moved every five or ten minutes—stools watery. The purging was not fully arrested until ten o'clock, P.M. He left at midnight. She never rallied. Death took place at five o'clock, P.M., March 25th.

This case is reported to warn the practitioner against commencing with the dose of elaterium recommended in the United States Dispensatory, 12th edition, page 364: "The full dose of commercial elaterium is often from one to two grains; but, as in this quantity it often vomits if of good quality, the best plan is to give it in the dose of a quarter or half of a grain, repeated every hour until it operates." I learned, on my second visit to this patient, that a tablespoonful of castor oil usually operated within five minutes after administration, and that the sulphate of magnesia, in an ordinary dose, purged her almost as severely as the elaterium, and produced similar dejections. It would be well for the practitioner to inquire into the idiosyncrasies of his patient before administering remedies, which I regret I neglected to do in this case.

Case of Poisoning by the Rhus Toxicodendron.

WILLIAM R. SANDERS, M.D., gives a very thorough history of a case of this kind in the *Edinburgh Journal of Medicine*, February, 1868. As poisoning by this plant is frequently observed by the American practitioner, especially those whose business is in the country, we merely refer to it without making any lengthy extracts.

The handling of the plant was pretty promptly followed by the usual vesicular eruptions, which Dr. Sanders terms erysipelatos. It was followed by a secondary eruption, which Dr. Sanders believed to have been due to the absorption of the poison by the blood.

Cyanhydric Acid.

An article on this subject is contributed to the *Archives Générales de Médecine* for May, 1868, by Drs. LECORCHÉ and MEURIOT, in which, after some remarks on the incompleteness of our knowledge of the effects of cyanhydric acid, some experiments are reported, and the author's conclusions from them indicated.

They divide the methods of death from this poison into two classes,—instantaneous and rapid; the first produced by syncope, the second by asphyxia; the first leaving behind no post-mortem indications; the second always causing congestion of the lungs, liver, and brain, and sometimes even ecchymosis; the first due to excitation of the central portion of the vagus nerve, and the second to an excitation of the bulb of the medulla oblongata. That the cessation of the heart's action in the first class is entirely due to an excitation of the *central* portion of the vagus, may be proved by a section of that nerve, after which instant death never occurs, although asphyxia is not prevented. The proof that in the second class the action is direct on the medulla oblongata is by exclusion and as follows: Death is not caused by a peripheral excitation of the vagus, or section of that nerve would prevent it; it is not caused by the production of a compound with globulin in the blood preventing its oxidation, as this compound, if it be formed at all in the blood (which has not been proved), is certainly in too small quantity to cause serious trouble; besides Preyer injected a solution of cyanhydrate of globulin into the veins of animals without serious results. Death cannot be caused either by the poison causing the retention of carbonic acid in the blood, for asphyxia produced by carbonic acid itself does not cause death with such rapidity.

Therapeutically our authors consider that cyanhydric acid would be useful in cases where the indications were to reduce the temperature and diminish the arterial pressure, both of which it does. They condemn it as an antispasmodic, as it increases the excitability of the spinal cord.

Curious Case of Poisoning by Oxalic Acid.

Dr. W. BIRD HERAPATH gives a case in the *Medical Times and Gazette*, April 25th, 1868, in which the following were the main features:

- 1st. The patient took three-quarters of an ounce avoirdupois.
- 2d. She died ten minutes afterward, or very shortly after.
- 3d. She tested the contents of her own stomach.

4th. She vomited almost all the poisoning material, as the coats of the stomach retained by absorption only two grains of the oxalic acid.

5th. There was nothing to be found in the contents of the stomach, which were merely effused blood. The stomach was intensely red; inflamed in that short period.

She vomited into a pail of water having a great quantity of lime in solution, and thus tested the contents of the stomach. "The vomited matter was like milk when seen upon the floor, and when she vomited into the pail it seemed to turn the water into milk." This, however, did not come out in the evidence. The floor was wooden, not of stone. The oxalic acid was dissolved in hot water highly charged with lime; it acted as an instantaneous emetic, and came up almost as it was swallowed, a milky-looking fluid, capable of precipitating a large quantity of lime.

Death from Coal Vapors.

DOUGLAS MACLAGAN, M.D., Professor of Medical Jurisprudence, University of Edinburgh, gives an interesting case in the *Edinburgh Medical Journal* for January, 1868, in which the analysis of the blood by the spectroscope led to very conclusive results. It appears that one Peter Dignan, with his wife, and a lodger by the name of Toll, took up their abode in a certain room on Friday, January 25th, 1867; that, on the evening of Friday, these persons were in good health and quite sober. At 7 A.M. the next morning a friend knocked at the door of the room, but failed to gain admittance. He again called at 8 o'clock and 11, and again later in the day, just as it was growing dark. On making these visits the witness, although not admitted into the house, heard Dignan cough, and, looking through the windows, he could see that the persons in the room were still in bed. The witness called again at 10 P.M. Saturday night, and threatened to break down the door if it were not opened, when Dignan jumped out of bed and opened the door. On gaining admittance witness found Mrs. Dignan lying dead in the bed from which her husband had just risen, and which was covered with vomited and feculent matter. The lodger Toll was lying in his bed apparently asleep. When roused and told to stand up, he at first was unable to do so. His bed was also covered with feculent matter. On being removed to an adjoining house Toll soon recovered. Under these circumstances Dignan and Toll were taken into custody on suspicion of being concerned in the death of Mrs. Dignan. On the 30th of January a variety of articles, including the stomach and other organs of the deceased, were delivered to Prof. MacLagan for analysis, with information from the crown counsel that there was suspicion of poison, and that if any poison was present it was one capable of causing (first) vomiting, (second) purging, and probably also (third) drowsiness and somnolence, before it caused death. A thorough examination of the vomited and feculent matter, as well as the internal organs of the deceased, failed to discover the slightest trace of any mineral poison or organic bases. From these negative results it was concluded that the death of the woman and the illness of the man Toll were due to something unconnected with the administration of poison in food or medicine, most probably to the inhalation of the vapor of burning coal, consisting of carbonic acid and carbonic oxide, the latter of which is held to be the most important. To determine this the blood of the deceased was examined by the spectroscope. In the case of ordinary blood the absorption bands, two in number, are found at the junction of the yellow and

green rays and in the green, a green space of course remaining between the two. If the blood, by means of reducing agents, is made to lose its oxygen, the absorption bands will disappear. But if the blood be saturated with carbonic oxide, and be treated with reducing agents (such as sulphide of ammonium, solution of protoxide of iron), the *absorption bands do not disappear*. A portion of the blood of the deceased was treated in this way, and the absorption bands were found not to disappear, in one trial remaining distinct for twenty-four hours; whilst in a sample of healthy blood, subjected to the same reducing agents, the bands disappeared in a few minutes.

The Professor considers these results as strongly confirmatory of the theory which he had advanced with regard to the probable cause of death. Subsequent testimony proved the correctness of these conclusions. It was proved that the room in which the deceased and prisoners slept, was insufficiently ventilated, and that the stove had been left with the door open. The authorities finding no evidence of crime, and that there was thus an explanation of the woman's death, the case came to an end and the two men were liberated.

Although the theory of death by coal vapor, did not receive countenance from the two very competent medical men who made the post-mortem examination, little doubts can exist in the mind after a review of the facts in the case, that such is a true explanation of the cause of death. Professor MacLagan remarks in conclusion: "I am inclined to suspect that death may have been caused in this way, in some of the numerous cases which occur to every one engaged in medico-legal practice, where there is suspicion of some kind of poisoning, but where an exhaustive series of researches fail to discover the least trace of poisoning of any kind, organic or inorganic. Now that we can call in the aid of the spectroscope, I should not hesitate to apply it in any case where ordinary chemical analysis gives negative results. It appears from experiments made in my laboratory, that blood impregnated with carbonic oxide, retains this gas for a length of time; but it is obvious that it would be always advantageous to have the blood as carefully preserved as possible, especially in warm weather, and it is therefore desirable that in any case where such an inquiry may possibly be called for, a small quantity of the blood should be set aside for examination in a completely filled and carefully sealed phial. The vomiting and purging, or rather involuntary evacuations, which seem to point to instant poisoning, are also of frequent occurrence in cases of death by carbon vapors.

Poisoning by Carbolic Acid.

Mr. FREDERICK SUTTON, gives the particulars of a case in the *Medical Times and Gazette*, April 25th, 1868. He was hastily summoned to see S. C., who had taken an ounce of carbolic acid (which was kept in the wards for disinfecting purposes), instead of a dose of black draught. The patient was seen five minutes after the acid was taken. She was reclining in a chair, insensible; face blanched and bathed in perspiration; pupils contracted; pulse one hundred; feeble, and very intermittent; respiration stertorous and smelling strongly of the acid. There was slight lividity of the lips, and tips of the fingers. She rapidly became worse and died within an hour and a half after taking the poison,—the body becoming much swollen before death.

The only treatment employed was an emetic and a stomach-pump. The former

she could not swallow, and the latter only brought back a small quantity of the contents of the stomach. Great difficulty was found in passing the tube down the œsophagus owing to the spasmodic contraction of its walls.—Post-mortem examination seventeen hours after death: Body well nourished. At the angles of the mouth the skin was discolored and shrivelled; interior of the mouth very white; mucous membrane of the œsophagus was dry and shrunken and of a brownish color; lungs healthy; heart flabby; both ventricles empty; valves healthy. The mucous membrane of the stomach (the latter contained a pint and a half of partly digested food) could be peeled from its walls. There were several dry, white patches on the surface of the rugæ, and the whole of the interior of the stomach was slightly inflamed. The walls of the duodenum were similarly affected though in a much slighter degree. The remaining organs presented no particular lesions.

Professor Taylor, in *Guy's Hospital Reports*, for 1868, also relates a case occurring in a child, in which death took place in twelve hours. The child was about one year and nine months old. It had swallowed about two teaspoonfuls of the ordinary dark-colored acid used for disinfecting purposes. The child was seen ten minutes after the poison was taken. On admission it lay motionless in its father's arms insensible to all external objects, but recovered itself in a short time. The pupils were insensible to light and contracted. The conjunctiva was insensible. Pulse one hundred and twenty, very weak, and could be counted only with great difficulty. There was a strong tarry odor to the breath. The respiration was much impeded. The skin cold and clammy. The face pale and covered with a cold perspiration. An emetic was given, but the child being unable to swallow, it was returned through the nose. There was spasmodic contraction of the walls of the œsophagus. The breathing becoming rapidly worse tracheotomy was performed, and the room filled with the vapor of water. This enabled the child to breathe with greater freedom, although the obstruction to respiration was still very great. The little patient finally sank at the end of twelve hours. The post-mortem appearances were very similar to those detailed in the foregoing case, with the exception that the stomach did not present such marked evidences of inflammatory action. Death in this case seemed to result mainly from the local action of the acid upon the air-passages.

Poisoning by the Absorption of Carbolic Acid.

E. S. MACHIN, Esq., communicates a case in the *British Medical Journal*, for March 7th, 1868, where three persons in the workhouse had been dressed with carbolic acid instead of sulphur lotion for the itch. The patients were women aged respectively 23, 60, and 68 years.

The acid had been applied to the entire surface. A few moments afterward they complained of smarting pain and headache, after which they were taken with giddiness, and rapidly became insensible. The girl aged 23, and her mother aged 60, died in the course of forty hours. The third patient rallied in about four hours, and recovered in a few days. No post-mortem was made. The acid used, was Calvert's carbolic acid for disinfecting purposes, and was, in appearance, dark and oily. About 6 ounces were used in "dressing" the three cases.

Experiments with the Poison of the Cobra di Capello.

JOHN SHORTT, M.D., of Madras, publishes in the *Lancet* (May 2d, 1868), a number of experiments with the venom of the cobra.

Immediately after the infliction of the bite of the reptile, the poison seems to be taken up by the venous radicles, and carried into the circulation; and, according to the vigor and activity of the cobra, as well as the size and vigor of the animal bitten, death is the result in from five minutes to twelve hours.

March 11th, 1867.—A full-grown pariah dog was bitten by a large cobra, measuring five feet in length, at 11.45 A.M., on the inner part of the left thigh. Two blood-points became visible, indicating the situation of the wound, and the dog immediately drew up the leg and walked lame. The animal frequently looked at the wounded part, and was inclined to lick the part with its tongue. Convulsions set in at 11.58; it micturated; the tongue protruded from the mouth, and the animal quietly expired at 1.3 P.M. Death in one hour and eighteen minutes.

Sectio cadaveris, two hours after death.—Head carefully opened. There was congestion of the veins, which contained dark, jelly-like blood: and the several sinuses were distended with blood of a similar kind. A trace of effusion of serum was evidenced by thickening of the pia mater from serous exudation. Brain of natural form and consistence. The puncta vasculosa were dark-colored. The lateral ventricles contained about two drachms of serum, of a slightly reddish tinge. Spinal column: On opening this canal, the vertebral veins were at once seen to be distended, and of a dark-blue color. On opening these, they were found filled with the same dark, jelly-like blood. There was some slight congestion, and indications of slight serous exudation within the membranes. The spinal cord itself was normal. Thorax: The lungs filled the cavity of the thorax, and were not congested, except at the base, which looked somewhat florid. The right cavities of the heart contained a soft, black, jelly-like coagulum; the left were empty. Abdomen: Liver dark-colored, hyperæmic, with watery exudation on the surface, and with a tendency to friability in its structure. Kidneys normal. Bladder contracted and empty. On examining the wound, no swelling of the adjacent parts was observed, but a slight greenish tinge in the skin, which, on being cut into, exhibited a livid discoloration to the extent of about two inches around the wound: and some watery effusion also existed.

Fourteen more experiments are given; the result being pretty much the same in each case, viz., speedy death.

On the Treatment of Poisoning by the Cobra.

PETER HOOD, M.D., refers, in the *Lancet* (February 15th, 1868), to the well-known case of Dr. Spilsbury's horsekeeper, who, after being bitten, was tied fast to the Doctor's buggy, and compelled to run several miles. The result was, that the man's body was bathed in a most profuse perspiration, and he became almost powerless from excessive fatigue. Dr. Spilsbury then gave doses of eau de luce (a preparation of ammonia), at regular intervals, and kept the man in gentle exercise. After a few hours the man was out of all danger, and recovered from the bite.

Dr. Hood, reasoning from this case, believes that *enforced muscular exercise* is the chief remedy to be employed in such cases. He says:

"This man's life was doubtless saved by maintaining, by *continuous and forced*

exercise, the action of his heart and lungs, and thus preventing the paralyzing influence of the poison upon those organs; and, at the same time, causing his skin to act so profusely, as to make it the eliminating channel for discharging the poison from his system.

"When a person has been bitten by a cobra, the first action of the poison appears to be on the great nervous centres of the body, the poison being immediately conveyed to them through the blood. This is rapidly shown by its paralyzing influence upon those organs which are supplied with nervous power from these sources.

"The muscular power of the heart, and the muscles of respiration, speedily become paralyzed, most probably through the influence of the par vagum and great sympathetic nerves. This muscular paralysis of the heart prevents it from propelling the blood through the lungs, and a rapid stagnation of the blood takes place, not only in the larger vessels of the body, but throughout the entire capillary system, which is seen by the sudden œdema, or swelling, that takes place, more especially in the bitten part.

"The breathing quickly becomes slow and labored, and this failure of the respiration causes the blood to be insufficiently decarbonized, owing to the proper amount of oxygen not being received into the system.

"The effect of the poison on the brain keeps pace with these symptoms, for drowsiness followed by coma supervenes, and the patient has all the appearance of one who has taken a large dose of opium. In fact, the history of the symptoms, and the course of the malady, is a striking instance corroborative of Dr. Bence Jones's theory of disease,—namely, that of a chemical agent or poison producing a mechanical disease. It is in vain, therefore, if I am correct in this pathological view, to seek for any medicine that would act as a specific for the cure of a bite from a cobra; for I doubt not every description of drug has been tried, and found to fail, the poison being far too rapidly absorbed into the system to admit of a hope of finding an antidote for it.

"This objection, however, I venture to think, does not deprive us of using *mechanical* means to overcome the consequences produced by the poison; and I am of opinion that it is only by use of such means that successful treatment can be looked for. So long as we can maintain the action of the heart and lungs, the patient *cannot die*. It is on this principle that the natives of India act to this day, for they are thoroughly aware of the vast importance of keeping a person who has been bitten by a cobra in constant motion, and even enforce the practice of it by beating the patient with sticks, similar, indeed, to our own treatment of a patient who is narcotized.

"An Indian officer recently informed me that he has seen numerous cases of persons who had been bitten by cobras; most of them died, but those who were saved were so by the adoption at the *earliest possible period* of enforced violent muscular exercise, and repeated doses of eau de luce.

"My object in writing this paper is to give publicity to the sound and practical method pursued by Dr. Spilsbury in the treatment of his horsekeeper, and to suggest that some means be devised—failing a horse and carriage, which is not at all times to be procured—to *keep the man in exercise independent of his will*, or the enforcement of it by others, which can only be done effectually by the invention of some mechanical contrivance on the same principle as our treadmill, or, more

simple still, an adaptation of one of those machines we see at fairs, called roundabouts."

But it would seem from the following, in the correspondence of the *Lancet*, April 25th, 1868, that the foregoing might have been one of those cases in which the poison was inert or absent altogether.

Dr. SHORTT has recently explained in a very satisfactory manner how it happens that the most inert substances have come to be regarded as possessing antidotal properties against the action of the cobra poison. The snake-charmers, the moment they capture a cobra, extract his fangs, and often cut out the poison gland. The fangs are often reproduced, and a snake under these circumstances may bite and draw blood even, and yet not eject poison. Dr. Shortt saw a snake recently at Malabar, and found a small cicatrix at the base and a little beyond the fangs, and a more careful examination discovered that the poison-gland had been removed. This operation was done once a month, the fangs being left unmolested. One can readily imagine how remedies applied to wounds inflicted by such a snake would be thought to possess special preservative powers. In a letter to the *Madras Times*, Dr. Shortt refers to some experiments with strychnia, as follows:

"I inoculated a dog with a small quantity of the cobra poison, and Dr. Nash injected hypodermically a solution of sulphate of strychnia, 1-30th of a grain. This was done almost immediately after the inoculation by the poison, and Dr. Nash continued his treatment throughout; and when I left the place some twenty-four or thirty hours after, the animal was alive. From first to last there was no evidence of the action of the poison. Dr. Nash says that the dog was ill during the night, and I believe the animal is still alive. It was Dr. Nash who suggested the use of strychnia originally, and it fully deserves further trial, as the action of the cobra poison is exactly the reverse of that of strychnia. It is possible that strychnia may possess antidotal properties for the cobra poison worth discovering. Dr. Nash hopes to make further trials, and I hope to be able to do so myself soon."

Tarantula Bite, with Recovery.

J. B. CRANDALL, A. A. Surgeon U.S.A., communicates the following case to the Leavenworth, Kansas, *Medical Herald* for February, 1868. J. H. D., Mexican, æt. 28, was admitted to Post Hospital, Fort Dodge, Kansas, August 23d, 1867. Was bitten by a tarantula on the evening of the 20th, as reported by the wagon-master, an American, who had resided for several years in New Mexico.

Patient had laid down under the cover of one of the wagons, and shortly after, hearing the Mexican scream, he went immediately to the spot and killed a tarantula; on examination found that he was bitten in the left side. He immediately cauterized the wound, and circumscribed it with a pencil of nitrate of silver; then put him into a government wagon and transported him to Fort Dodge, the weather being extremely warm during the time. At the time of admission to hospital, I examined the case, and found that he had been bitten in the left side, just below the tenth rib. The amount of caustic used, together with the extensive inflammation that followed, prevented me from ascertaining the minute points of the wound. The side was swollen, extending over the lateral and anterior portion of the chest up to the axillary space—the superficial glands of the neck were also swollen—pulse quick, tongue of a dark brown color; he was delirious at the time; breathing

very difficult; bowels constipated. Ordered an enema of warm water and oil ricini; had the head shaved, and applied ice; hot fomentation on side; bowels moved late in the afternoon, after the second enema.

24th; head symptoms more favorable; but is conscious only for a few minutes at a time; breathing still labored; no perceptible change in the pulse; it is with great exertion that he can be made to swallow; has taken during the day about three ounces of beef tea; slept very little during the night.

25th; weather more favorable, as we have a cool breeze that seems to revive him; is rational and able to make his wants known by whispering; complains of pain over the region of the bladder; introduced catheter, and removed about six ounces of urine, which was dark and of a strong acid reaction.

26th; symptoms more favorable; swelling of the superficial glands of the neck gradually receding; breathing more natural; side commencing to slough, extending over a surface of about the size of the palm of a man's hand; ordered an external application of lint saturated with a solution of permanganate of potash, also ordered the patient to take small quantities of brandy, together with the beef tea. I then continued the supporting treatment, relying mostly upon diet and good ventilation; the case progressed favorably, and was discharged from hospital cured.

Sugar in the Urine as a Symptom of Death from Cold.

In a letter to the *Edinburgh Medical Journal*, for January, 1868, Professor MACLAGAN refers to the experiments of Dr. Bence Jones, wherein rabbits were killed by subjecting them, for some time, to a freezing temperature. In all these experiments the urine of the animals, after death, was found to be diabetic. Professor Brücke repeated and confirmed these experiments, and found that, although traces of sugar can always be found in the urine of rabbits, it was "incomparably greater" when they were frozen to death. Professor MacLagan is of the opinion that these facts may aid in determining whether persons found dead in winter have really died from exposure; although it is true that, in the majority of instances, such cases occur under circumstances which render any scientific inquiry, into the cause of death, unnecessary, and consequently the authorities do not order a post-mortem examination. The urine, however, could be easily drawn off by a catheter, where neither the authorities order, nor the relatives permit a dissection.

Poisoning by Phosphorus.

A case in which the value of the evidence of two distinguished experts was singularly correct, is reported in a late number of *L'Union Médicale*. A man, about an hour after taking some soup from his wife, was seized, on the way to his work, with symptoms of intestinal pain and vomiting. He was taken to the Hôpital La Charité, and was treated by Dr. Pestal, but died on the sixth day in intolerable pain. He had accused his wife of poisoning him with "dogbane" (colchicum), but MM. Tardieu and Roussin having discovered in the intestines ammonio-magnesian phosphate, deposited sulphur, artificial ultramarine blue, and a little chip of wood covered with sulphur—in fact, the chemicals of a lucifer match—they came to the conclusion that the man had died from phosphorus derived from matches, a view which the post-mortem examination supported. The confession of the woman ultimately confirmed the conclusion of the experts.

MATERIA MEDICA AND THERAPEUTICS.

I. PHARMACOLOGY.

Syrup of Hypophosphite of Iron.

C. H. WOOD, F.C.S., in the *Lond. Pharm. Journal*, of April, gives the following improved process for making the above syrup:

Granulated Sulphate of Iron,	. . . . .	480 grains.
Hypophosphite of Lime,	. . . . .	326 "
Dilute Phosphoric Acid,	. . . . .	1 fl. oz.
Water,	. . . . .	1½ fl. oz.
Syrup,	. . . . .	q. s.

Dissolve, without heat, the sulphate of iron in the phosphoric acid, previously mixed with the water. Rub the hypophosphite to a fine powder, and pour it on the solution of iron. Triturate together for two or three minutes, then pour the mixture on a piece of damp calico, and squeeze out the liquid with the hands. Filter the solution into a measure-glass, and add seven times its volume of strong syrup. Each fluid drachm contains two grains hypophosphite of iron.

Crew's Prepared Sinapism.

The *American Journal of Pharmacy* (May), after referring to the "Papier Sinapisé" of M. RIGOLLET, and "Cooper's Sinapine Tissue," which appears to owe its power to capsicum, says: Mr. Crew has worked out perfectly the problem of an efficient and portable mustard-plaster. The mustard, in substance, forming a uniform layer on the paper, sufficiently pliable, adherent, and when dipped in water is ready for application in half a minute. This preparation retains its virtue, unaffected by age, as long as it is kept dry.

Laster's New Method of Preparing the Sulphate and Iodide of Manganese.

ALEXANDER J. SEMMES, M.D., Visiting Physician, Charity Hospital, New Orleans, communicates to the *Richmond Medical Journal*, January, 1868, Mr. Laster's method of preparing the above salts.

Take of Binoxide of Manganese,	. . . . .	40 parts.
Hydrochloric Acid (Commercial),	. . . . .	200 "

Dissolve the binoxide in the acid, beneath a chimney flue, and when solution is complete and chlorine no longer evolved, mix very gradually sulphuric acid (53 parts) with the reddish liquid; continue the evaporation beneath the flue until

acid vapor is no longer driven off, and the mass becomes dry. Dissolve this mass in water (350 parts) heated to the boiling-point. Treat this solution with carbonate of manganese until it becomes rose red, filter or decant, evaporate and crystallize.

Unlike the objectionable article of the U. S. Pharmacopœia, the sulphate of manganese prepared according to Laster's new method contains no arsenic, and is otherwise possessed of the usual properties of the pure salt; this sulphate can be employed in the preparation of the carbonate, phosphate, and lactate, by the usual processes of double decomposition.

To prepare the iodide Mr. Laster has devised the succeeding formulæ, either of which he hopes will meet the requirements of the pharmacist and medical practitioner :

Take of Iodide of Calcium,	grs. 142
Sulphate of Manganese,	grs. 86
Water, at boiling-point,	pt. 1

Dissolve the sulphate in one-half of the water heated to the boiling-point, and the iodide in remainder; mix the solutions, continue the boiling for ten minutes, and, after subsidence of the precipitate, and while solution is warm, filter and evaporate to dryness. Or,

Take of Iodide of Lead,	grs. 220
Sulphate of Manganese,	grs. 87.
Water,	oss. 20

Dissolve the sulphate of manganese in the water heated to the boiling-point, and add the iodide of lead portion-wise, observing to stir the contents of the capsule after each addition; when all the iodide has been introduced, continue the boiling for fifteen minutes, then filter and evaporate to dryness."

In the first process the results of the decomposition are iodide of manganese and the insoluble sulphate of lime; in the second, the same iodide is formed, and at the same time sulphate of lead is precipitated; the insoluble compounds are removed by filtration; in either instance a slight excess of sulphate of manganese is employed to insure the complete decomposition of the calcic and plumbic iodides.

The water of crystallization in sulphate of manganese being variable, Mr. Laster is always accustomed to dry the sulphate used at a temperature of 400°; dried at this temperature, the preparation has a uniform constitution, which is not the case when the crystallized salt is employed.

Decolorized Tincture of Iodine.

The *Journal des Connaissances Médicales*, in a letter from a correspondent, gives the following formula :

Tinct. Iodine co.,	gram. iij.
Carbolic Acid pure, liquid,	gtt. vj.
Glycerine,	gram. 30
Aqua Destil.,	gram. 150

The *Boston Medical and Surgical Journal* states that it is only necessary to place this in the sun a few hours to entirely decolorize it.

S. BARUCH, M.D., Camden, S. C., in the *New York Medical Record*, February 15th, states that a saturated solution of the hypophosphite of soda, or bisulphite,

added in proportion of about one-sixth to the tincture of iodine, will by agitation completely decolorize it. A few small crystals added to the undiluted tincture of iodine, will accomplish the same result.

Reduction of Carbonic Acid to Oxalic Acid.

Dr. E. DRECHSEL has achieved a triumph in synthetical chemistry by producing the oxalate of soda by means of carbonic acid. A mixture of pure sodium and dry sand is heated in a flask to about 350° C., over which a stream of dry carbonic acid is rapidly passed. After a few hours the metal becomes red and ultimately black. To avoid the reduction of the carbon, the heat should be moderated in the latter part of the operation, and the whole slowly cooled. Left in the air to oxidize and then exhausted with water, about one-tenth of the mass is found to be oxalate of soda. In the same way oxalate of potassa may be obtained from an amalgam containing 3 per cent. of potassium.

Carbolated Glycerine.

GEORGE W. LAWRENCE, M.D., Hot Springs, Arkansas (*Med. and Surg. Reporter*, February 2d), gives the following process for making carbolated glycerine. In a water-bath ranging from 100° to 130° F., place one ounce of pure crystallized carbolic acid mixed with nine times its bulk, when melted, of pure glycerine, and agitate while hot until thoroughly incorporated. This preparation variously diluted with water or glycerine, is invaluable in phagedena, sloughing ulcers, bed-sores, syphilitic ulcers, and all that class of obdurate ills. It is beneficial in cutaneous diseases of a parasitic origin. Diluted with ten to twenty times its bulk of pure water, it can be used with the atomizer.

The Prevention of the Oxidation of Sulphate of Iron.

Mr. GEORGE WELLBORN (*London Pharm. Journal*) says: There appears to be a very simple and effectual mode of preventing the oxidation of proto-sulph. of iron, by putting a small lump of camphor wrapped in tissue paper into the bottle with the salt.

It is now three months since Mr. W. adopted this plan. The bottle is frequently opened, yet the salt is as free from oxidation, and its aqueous solution as clear as it could have been before crystallization. It also stands the other tests of the Pharmacopœia.

Chlorodyne.

W. W. ELY, M.D., of Rochester, N. Y., in a letter to the *New York Medical Record*, refers to the recommendation of chlorodyne, in the late edition of Dr. Aitkin's Practice, with surprise, as there is no official or otherwise sanctioned formula for making the article, while the number which claim value is quite large. The formula given by Dr. Aitkin, is as follows:

R. Chloroform,	. . . . .	℥ssiv.
Æther Sulph.,	. . . . .	℥ssij.
Theriac (Treacle),	. . . . .	℥ssj.
Mucilage Acac.,	. . . . .	℥ssij.
Morph Mur.,	. . . . .	gr. viij.
Acid Hydrocyanic Dil. 2 pr. et.,	. . . . .	℥ssij.
Ol. Menth. P.,	. . . . .	℥℥ iv to ℥℥ vj.
Misce Bene.		

On standing, the whole of the ether and chloroform separate from the "constituent," so that the formula cannot be considered an eligible one. Dr. ELY gives the following as an imitation of the chlorodyne of J. Collis Browne:

Heat molasses in a water-bath, and remove the scum until it becomes clear. Mix one part of officinal mucilage of acacia with two parts of the molasses to form the constituent. Dissolve sulphate morphia, gr. viij, in f 3iss. of water with heat, and add gr. viij of powdered liquorice. To this solution add f3j concentrated sulphuric ether. Add a portion of the constituent, and f3ij of chloroform, and shake the mixture. Add to this enough of the constituent to make f3j. Ten minims contains 1/4th gr. morphia, two minims or ten drops of chloroform, and half the quantity of ether.

Mr. EDWARD MCINALL, Jr. (*American Journal of Pharmacy*, May), gives the following formula for making chlorodyne:

Take of Sulphate of Morph.,	. . . . .	grs. lxiv.
Alcohol, 95 pr. et.,	. . . . .	f3ij.
Chloroform Purif.,	. . . . .	f3vj.
Sulphuric Acid,	. . . . .	q. s.
Ext. Cannabis Ind. (Allin's),	. . . . .	5ss.
Oleoresin of Capsicum,	. . . . .	gtt. xij.
Hydrocyanic Acid, Scheele's,	. . . . .	gtt. xvj.

Shake together the morphia, alcohol, and chloroform; then add the sulphuric acid; shake well until it becomes clear; then add the oleoresin of capsicum, ext. cannabis, and hydrocyanic acid. This is a clear dark-green liquid, possessing the acrid taste of capsicum, and odor of chloroform. When held to the sunlight it has a dark, rich, claret color. It has been extensively used by many of our most eminent city practitioners, who prefer it to Browne's in many cases. Dose, fifteen to thirty drops. Each teaspoonful contains one grain morphia, and about half a grain Indian hemp.

A Substitute for Musk.

In the *Bulletin Général de Thérapeutique*, for April 15th, 1868, there is an article contributed by STANISLAS MARTIN, in which he states that in Central Africa, there are immense herds of a small ruminant allied to the gazelles, the dung of which when dried, has a powerful odor of musk, which increases with age. It is found in small masses, never entirely round, of a weight varying from 10 to 15 centigrammes (1 1/4 to 2 1/4 grains). They are of a brown color and burn with difficulty; the smoke having an herbaceous odor. The ashes contain very little potassa, although the microscope shows the dung to be composed largely of woody fibre.

By chemical action there were isolated from it chlorophylle, lignine, and a vegetable animal matter, with the odor of musk.

M. Martin, suggests the use of this material powdered in aromatic sachets and in the formation of cosmetics. He thinks that the odor of the alcoholic solution is much more agreeable than that obtained by using musk.

On account of the great abundance of the dung of this animal, in its native country, there would be no expense in obtaining it except that of the transportation alone.

Preservation of the Syrup of Iodide of Iron.

THOMAS B. GROVES, F.C.S. (*London Pharmaceutical Journal*, March), says: Phosphoric acid is the only acid that can be relied upon for the preservation of the syrup of iodide of iron. He recommends the addition of one-half fluidounce of dilute phosphoric acid to thirty-one fluidounces syrup iodide of iron. The acid should not be added until the syrup is perfectly cool. With this proportion the syrup keeps perfectly well, whether the bottle be full or only partially so.

Liquor Bismuthi et Ammoniae Citratis.

C. H. WOOD, F.C.S. (*London Pharmaceutical Journal*, March), gives the following process for making the above-named article:

Cryst. Ternitrate of Bismuth,	18½ oz. (av.)
Citric Acid,	20 oz.
Liq. Ammon. fort,	1 pint (Imp.), or q. s.
Distilled Water,	q. s.

The citric acid is dissolved in two pints of the water, and the crystals of nitrate added. They rapidly dissolve, and after a little time a white precipitate begins to form. As soon as the nitrate is dissolved, the ammonia, diluted with an equal bulk of water, is added little by little, until the precipitate is dissolved and the liquid is neutral. The resulting solution is, if necessary, filtered and diluted to the volume of one gallon.

Pharmaceutical Notes.

We take the following memoranda from the *American Journal of Pharmacy*. EDWARD R. SQUIBB, M.D., gives the following formula for *Podophyllum Pills*:

Take of Resin of Podophyllum,	36 grains.
Alcoholic Extract of Belladonna,	18 "
(Or Alcoholic Extract of Hyoscyamus,)	144 "
Powdered Capsicum,	144 "
" Sugar of Milk,	144 "
" Acacia,	36 "
Glycerine,	40 minims.
Syrup, a sufficient quantity.	

Put the resin and sugar of milk into a mortar of large size, and triturate them together very thoroughly. Then add the alcoholic extract of belladonna, and again triturate very thoroughly. Then add the powdered capsicum and acacia, and repeat the thorough and prolonged trituration. Finally add the glycerine, and syrup enough to form a mass of proper pilular consistence, and beat the whole well together. Divide this into one hundred and forty-four pills, dry these by exposure at ordinary temperatures until just hard enough to retain their form, and then keep them in a well-stopped bottle to prevent further drying.

These pills are rarely, if ever, well used as a purgative or cathartic proper, and are best and perhaps only adapted to use as an aperient and alterative medicine. One pill taken at night will usually insure the morning evacuation. If the pill be without effect, or produce too slight an effect, another may be taken in the morning.

JAMES W. MILL presents the following process for preparing a reliable *Fluid Extract of Ergot*:

Take of Ergot, finely ground, and as much of it as possible passed through a No. 60 sieve, sixteen troy-ounces.

Water, acidulated with acetic acid in the proportion of two fluidrachms to the pint, a sufficient quantity.

Moisten first the fine powder with the menstruum, and pack it in a glass percolator with moderate pressure; in the same way treat the coarser powder, and proceed with the percolation till three pints have been obtained; evaporate this on a water-bath to twelve fluidounces; mix with it four fluidounces of alcohol and filter. In this process it will be observed that only the preservative influence of alcohol is called into requisition—the extraction of the drug being accomplished wholly by means of the acidulated water. A saving of nearly a dollar a pint is thus effected, and without, I think, any detriment to the therapeutic value of the preparation.

F. V. HYDENBEICH, in giving the results of his experiments with *Cubebin* and other constituents of cubebs, says:

- 1st. That the diuretic properties of cubebs reside in the soft resin;
- 2d. That cubebin, as compared with the other constituents of cubeb, is inert;
- 3d. That the volatile oil acts as a carminative and stimulant, producing, in large doses, the unpleasant effects produced by other volatile oils having similar properties.

CHARLES BULLOCH, in a communication in the Proceedings of the Pharmaceutical Association relative to the value of the *Resin of Veratrum Viride*, says:

The opinion derived from the investigation leads to the belief that the resin of *Veratrum viride*, when purified from adhering alkaloids, does not possess the sedative action on the circulatory system so strongly marked in the plant, and which, it has been shown, is possessed in a marked degree by the alkaloid from the plant insoluble in ether.

A. THEODORE MOITH gives the following process for making *Sweet Spirit of Nitre*:

A retort, a glass receiver marked with a strip of paper, pasted on, to indicate 12 and 15 ounces, a Fahrenheit thermometer, besides a stove, and a stove kettle for water-bath, are all that are necessary in the way of apparatus.

Around a pencil I coiled loosely a cylinder of fine copper wire (No. 22 will do), 2 oz.; remove the pencil, and introduce or slip the wire into the retort. Pour on this, through a long-necked funnel, a mixture made as follows:

To 1 pint stronger alcohol pour slowly, under constant stirring, 2 fluidounces sulphuric acid, sp. gr. 1.843, and then 2½ fluidounces nitric acid, 1.42; place the retort in the water-bath, connect with the well-cooled receiver; place the thermometer in the water-bath, and at the temperature of 175° F. distil over 12 fluidounces. Reduce now the water in the water-bath, with enough cold water, to the temperature of 60° or 65° F., and pour through the funnel into the retort ½ fluid-ounce more nitric acid, and resume the distillation till 15 fluidounces are in the receiver. This ether mix with 2 pints stronger alcohol.

Remove the copper wire from the retort, wash well, and keep it for the next operation.

The cost of the three pints of ether will be not over \$1.77, and it answers all the tests of the Pharmacopœia.

JOSEPH P. REMINGTON, relative to *Sulphite of Magnesia*, says:

This salt having been in request lately, the authorities at the writer's command were searched for a formula for its preparation.

The only formula appearing was one from *Wittstein's Vierteljahresschrift*, as follows: "Sulphite of Magnesia may be prepared by passing sulphurous acid gas through water holding carbonate of magnesia in suspension; but the salt so obtained is not quite white. A better way is to dissolve 136 parts of crystallized sulphite of soda, free from carbonate and sulphate, in the smallest quantity of hot water, and to filter into this hot liquid a concentrated solution of 123 parts of Epsom Salts, the mixture to be stirred until cold. The mass of fine crystals which form are allowed to drain on a strainer, then pressed and dried at a moderate heat. The product should weigh 69 parts."

His own process is as follows:

Eight ounces av. of Jennings's Calcined Magnesia was made into a smooth paste with a pint of distilled water and aqueous sulphurous acid U. S. P., sp.gr. 1.035, was added with stirring, until the liquid gave a slight acid reaction; the crystals formed were then allowed to subside, and the clear liquid was decanted; the sulphite of magnesia was then drained on a muslin strainer and washed with distilled water until free from impurities, then again allowed to drain, and dried on bibulous paper; the yield was 1 lb. 8 oz. of dry crystals. The washing can be accomplished most effectually, and with the use of the least water, by allowing the crystals to collect in a stratum on the bottom of the strainer, and then adding just enough distilled water to cover the surface; any sulphate of magnesia is dissolved, and this together with the yellow mother water is displaced by the descending clean water, and the salt is left perfectly white. By this process sulphite of magnesia can be obtained as pure and white as by double decomposition, with economy in the most valuable items, time and labor, the yellow coloration all disappearing by the simple process of washing, and the loss in washing is small, as the salt is difficultly soluble in cold water.

C. LEWIS DIEHL gives the following formula for *Chlorate of Quinia* and the *Solution of Chlorate of Baryta*, required in its manufacture:

Chlorate of Quinia.—Heat 1 gallon of distilled water, to which a small quantity of solution of chlorate of baryta has been added, to near the boiling-point, and gradually add 5 oz. of pure sulphate of quinia. Then add solution of chlorate of baryta in fractional quantities, until a portion of the liquid, when filtered from sulphate of baryta, is no longer precipitated by the baryta salt, and forms a decided precipitate on the addition of dilute sulphuric acid. Now filter the solution and allow it to stand for twenty-four hours, when the chlorate will have crystallized in handsome acicular needles, which are arranged in mushroom-shaped tufts. Drain the crystals in a funnel, and dry in the air on filtering-paper, placed on a porous tile.

By following these directions the operator cannot fail to obtain a handsome product. The first portions of the filtrate, as they drop into a cold vessel, will appear milky; but, as the filtrate accumulates, the precipitate is redissolved, and the solution remains clear until all is filtered. This circumstance will serve as a guide to the proper concentration of the solution; for if the solution is more concentrated, the crystals formed will be very small; if less concentrated, it will crystallize in needles an inch or more in length frequently, which, when dry, possess a pearly lustre, and in individual tufts are very handsome, but present a very poor

JAMES W. MILL presents the following process for preparing a reliable *Extract of Ergot*:

Take of Ergot, finely ground, and as much of it as possible passed through a No. 60 sieve, 6 ounces.

Water, acidulated with acetic acid in the proportion of two fluidrachms to the pint, a sufficient quantity.

Moisten first the fine powder with the menstruum, and pack in a percolator with moderate pressure; in the same way treat the coarser powder. Proceed with the percolation till three pints have been obtained on a water-bath to twelve fluidounces; mix with it four fluidounces of alcohol. In this process it will be observed that only the alcohol is called into requisition—the extraction of the ergot is wholly by means of the acidulated water. A saving of time is thus effected, and without, I think, any detriment to the preparation.

F. V. HYDENREICH, in giving the results of his experiments on other constituents of cubebs, says:

- 1st. That the diuretic properties of cubebs are destroyed by the addition of water.
 - 2d. That cubebin, as compared with the oil of cubebs, is more powerful.
 - 3d. That the volatile oil acts as a carminative.
- does, the unpleasant effects produced by the oil of cubebs are thereby avoided.

CHARLES BULLOCH, in a communication to the Association relative to the value of

The opinion derived from the experiments of Veratrum viride, when purified by the action of sulphuric acid, is that its sedative action on the circulation is destroyed, which, it has been shown, is the plant insoluble in ether.

A. THEODORE MOITH gives the following

A retort, a glass receiver, and a water-bath of 12 and 15 ounces, a Fahrenheit thermometer, and a glass for water-bath, are all required.

Around a pencil of 2 oz.; remove the product, this, through a filter, and wash with water.

To 1 pint strain the product

sulphuric acid, and

retort in the water-bath

ometer in the water-bath

ounces.

temper

ounce

rece

the product thus obtained

or until a portion filtered

liquid from the precipitate,

3. Dissolve $\frac{1}{2}$ oz. oil of orange (fresh) in $1\frac{1}{2}$ oz. alcohol fort., triturate with 8 oz.

ate of magnesia, and gradually add filtrate (2). Agitate well, and filter on a sugar, which dissolve by agitation, and filter. the simple elixir may be colored with a mixture of caramel and solutions of the latter become gradually darkened by the pyrophos-

that I made, three months ago, of ferrated simple and colored elixir, perfectly bright, and indicate no inclination to change, although light and air.

nts the following process for making *Oxalate of Iron*:

ate of Iron (pure), 3xviij, grs. xxxij.
and a half pints. 3viij, grs. xxiv.

iron and oxalic acid separately; the acid in one and a the sulphate of iron in the remaining two pints. muslin, to remove any accidental impurities; then the mixture, set it by, that the precipitate may sub- ter and wash with water until the washings pass as paper. Then dry the precipitate at a tem-

the above formula may be powdered, and the th afterwards weighed, any loss occurring sh additions of either substance.

35 Ute sulphuric acid, a small loss of the carried off in the supernatant liquid.

red powder, nearly devoid of smell or and their carbonates. These substances

in prescriptions.

and permanent proto-salt of iron, and possessing little

not liable to produce constipation, nor any functional ex- angement, which the use of other chalybeate salts often induces,

so easily borne by persons whose idiosyncrasy debars the use of other of the metal, will, I have no doubt, render it a very popular and useful remedy

with the medical profession.

The usual dose, according to Dr. Schæffer, is from two to three grains.

As it is not soluble to any considerable extent either in water, alcohol, syrup, or glycerine, I should think that the best mode of administration would be in the form of pill. As much as five gr grains can be made into a pill of convenient size, but for those who may have an aversion to medicine in this form, it may be prescribed in powder accompanied by directions that it be mixed with sugar and water, syrup of orange, molasses, or any other palatable and convenient vehicle.

Dr. Schæffer says, "Since the first use of oxalate of iron, it has been ascertained that in cases of excessive irritability, when ordinary preparations of iron could not be tolerated, the oxalate was taken with the greatest benefit."

appearance in bulk. The mother liquors will yield another crop of crystals, but are best reserved for a future operation. A small amount of chlorate of baryta is recommended to be added to the hot water before the addition of the sulphate of quinia, as by that means the latter appears to dissolve more rapidly.

The dried salt, as thus prepared, is perfectly white, and presents a very handsome appearance. It is but sparingly soluble in cold water, but freely soluble at a boiling temperature. It is very freely soluble in alcohol and chloroform, and freely soluble in ether. Placed on heated platinum foil, it forms small oily globules, and immediately thereafter deflagrates, leaving no residue.

Solution of Chlorate of Baryta.—A. Dissolve 15 oz. tartaric acid in 2 pints of distilled water, add gradually 14 oz. carbonate of soda (in clear crystals), and filter. This forms *bitartrate of soda*.

B. Dissolve 12 oz. pure chlorate of potassa in 2 pints warm distilled water, and filter into solution A. Evaporate to 2 pints, allow to cool, and filter from precipitate. By double decomposition *chlorate of soda* is formed, which remains in solution, and *bitartrate of potassa* is precipitated.

C. Dissolve 12 oz. oxalic acid in 2 pints water, at a temperature not exceeding 112° F., and filter into solution B. Mix the solutions thoroughly, and expose to a freezing mixture until the temperature has fallen below 32° F., and the precipitate has perfectly subsided; then decant the clear liquid from precipitate, express the residue, and after filtering the expressed liquid add to the decanted portion. The oxalic acid liberates the chloric acid, forming sparingly soluble oxalate of soda, which, by aid of the freezing mixture, is almost entirely precipitated. A small proportion of free oxalic and tartaric acids and oxalates of soda and potassa now contaminates the *solution of chloric acid*, which is otherwise pure.

D. Saturate decantate C with a slight excess of recently precipitated moist carbonate of baryta, filter the solution, evaporate to 2 pints, and again filter.

Thus is formed the *solution of chlorate of baryta* used by me, which is tolerably free from impurity, as the oxalic and tartaric acid contained in the solution of chloric acid unite with baryta to form very sparingly soluble baryta salts, leaving the solution contaminated only with small amounts of chlorate of soda and potassa, which do not interfere in the least in the subsequent preparation of the salt of the alkaloids.

Mr. Diehl, in regard to the *Elixir Calisaya Ferrata*, says:

I here offer a formula that will furnish a preparation, which, containing the usual quantity of calisaya bark and aromatics, has but very little color, will mix with pyrophosphate of iron, in any desirable proportion, without changing, and will remain perfectly bright and transparent.

1. Take of calisaya bark 24 oz., orange-peel 16 oz., coriander 4 oz., cinnamon 3 oz., cardamom 1½ oz., anise 1 oz. Bruise these ingredients finely, moisten with a menstruum consisting of 6 parts by measure of water and 2 parts alcohol, .835, and pack into an appropriate percolator, in which allow it to macerate for 24 hours. Then add the same menstruum until 5 gallons of percolate is obtained.

2. From 5 pints (or more if required) of solution of tersulphate of iron prepare hydrated sesquioxide of iron, according to the direction of the U. S. Pharm. Mix the product thus obtained with the percolate (1), and shake frequently for 3 days, or until a portion filtered off has but a slight yellow color. Then express the liquid from the precipitate, and filter through paper.

3. Dissolve ½ oz. oil of orange (fresh) in 1½ oz. alcohol fort., triturate with 8 oz.

carbonate of magnesia, and gradually add filtrate (2). Agitate well, and filter on 220 oz. of sugar, which dissolve by agitation, and filter.

If desirable, the simple elixir may be colored with a mixture of caramel and cochineal, as solutions of the latter become gradually darkened by the pyrophosphate of iron.

The samples that I made, three months ago, of ferrated simple and colored elixir, are at this date perfectly bright, and indicate no inclination to change, although freely exposed to light and air.

J. B. MOORE presents the following process for making *Oxalate of Iron*:

Take of Protosulphate of Iron (pure),	℥xviij, grs. xxxij.
Oxalic Acid,	℥viij, grs. xxiv.
Water, three and a half pints.	

Dissolve the sulphate of iron and oxalic acid separately; the acid in one and a half pints of the water, and the sulphate of iron in the remaining two pints. Strain both solutions through muslin, to remove any accidental impurities; then mix them, and, having stirred the mixture, set it by, that the precipitate may subside. Collect the latter upon a filter and wash with water until the washings pass devoid of acid reaction upon litmus paper. Then dry the precipitate at a temperature not exceeding 120°.

To facilitate solution, the acid in the above formula may be powdered, and the sulphate of iron finely bruised, and both afterwards weighed, any loss occurring during the process being supplied by fresh additions of either substance.

As the oxalate is slightly soluble in dilute sulphuric acid, a small loss of the precipitate is sustained by a portion being carried off in the supernatant liquid.

Oxalate of iron is a beautiful canary-colored powder, nearly devoid of smell or taste, and decomposed by the alkalies and their carbonates. These substances are therefore incompatible with it in prescriptions.

The oxalate being a pure and permanent proto-salt of iron, and possessing little or no astringency, and not liable to produce constipation, nor any functional excitement or derangement, which the use of other chalybeate salts often induces, and being so easily borne by persons whose idiosyncrasy debars the use of other salts of the metal, will, I have no doubt, render it a very popular and useful remedy with the medical profession.

The usual dose, according to Dr. Schæffer, is from two to three grains.

As it is not soluble to any considerable extent either in water, alcohol, syrup, or glycerine, I should think that the best mode of administration would be in the form of pill. As much as five grains can be made into a pill of convenient size, but for those who may have an aversion to medicine in this form, it may be prescribed in powder accompanied by directions that it be mixed with sugar and water, syrup of orange, molasses, or any other palatable and convenient vehicle.

Dr. Schæffer says, "Since the first use of oxalate of iron, it has been ascertained that in cases of excessive irritability, when ordinary preparations of iron could not be tolerated, the oxalate was taken with the greatest benefit."

II. GENERAL AND SPECIAL THERAPEUTICS.

Physiological Action and Therapeutical Uses of Conium, Belladonna, and Hyoscyamus.

LECTURE I.

THE following is an abstract, specially prepared for the *Pharmaceutical Journal*, of the Gulstonian lectures lately delivered at the College of Physicians by Dr. John Harley, on "The Physiological Action and Therapeutical Uses of Conium, Belladonna, and Hyoscyamus, alone and in combination with Opium."

"Dr. Harley, in his first lecture, showed, from observations upon himself and others, in the treatment of various diseases, that the whole action of conium was confined to the motor centres, resulting in temporary depression of the functional activity of the *corpora striata*, the minor centres of motion, and the whole reflex function of the spinal cord; the tranquillizing effect of this drug on these excited nervous centres was compared with the influence of opium on an over-excited brain. Among the ancient Greek physicians some accurate notions of the action of hemlock were entertained, but since their time the subject has been so obscured that hardly any advance has been made.

"If an individual be walking about after taking the drug, its action will be first noticed in the legs by a heavy dragging sensation, and distinct impairment of motor power; after taking ʒij of the 'Succus Conii,' B. P., in addition to the above symptoms, there was a want of adaptation of the eye; for fixed objects the sight was good, but not for bodies in motion; after an hour these effects suddenly disappeared. If ʒv or ʒvj are taken, more marked symptoms supervene; a feeling of great lethargy, giddiness, hazy vision, disinclination for any muscular exertion, and drooping of the eyelids. The rapidity of accession of this loss of voluntary power varies with the dose; to a man aged fifty-seven, ʒj was given, but the giddiness and weakness came on so quickly that he would have fallen without assistance; in about two hours he had quite recovered the use of his limbs.

"The action of hemlock is uniform and invariable in man, but it must be given in such doses as will produce a distinct physiological effect, and this effect is proportioned not to the muscular strength, but to the motor activity of the individual; thus, those who lead a sedentary life are more affected than those of active habits, and a restless child will take, without appreciable effect, a dose of conium sufficient to paralyze an adult of indolent habits.

"To a young horse six ounces of the succus conii were given, but no effect followed till the dose had been gradually increased to sixteen ounces, when a set of symptoms came on similar to those which are found in man.

"One of the earliest indications of its effect is paralysis of the third nerve, and consequently ptosis, and dilated pupil; its last effect is complete obliteration of all muscular movement derived from the cerebro-spinal motor tract. In many hundred experiments no pure cerebral effects have been noticed.

"The lecturer assumed that conia represented the active principle of hemlock in its entirety, but whether as conia or some product of its decomposition, he had been unable to make out; the urine is unaffected when even powerful doses have been given. Two methods were adopted to find this alkaloid in the urine.

"1. The urea having been precipitated by proto-nitrate of mercury, the

clear filtrate was allowed to evaporate spontaneously; the syrupy residue was treated with an excess of caustic potash and washed with ether; after the distillation of the ether, an oily residue remained of a minty odor, but possessing none of the characters of conia. On adding caustic potash, the peculiar smell of the drug was evolved; but this seems to be a fallacious test, for on treating perfectly normal urine in a similar way, the odor exactly resembled the other.

"2. The urine, after being mixed with a saturated solution of oxalic acid, was allowed to evaporate to a brown syrupy residue. On adding an excess of potash, no odor nor any trace of conia could be found. No odor has been noticed in the breath, nor does it appear to be eliminated by any of the secretions.

"With regard to its use in disease, great stress was laid on the proposition 'That a dose of hemlock, which falls far short of producing its peculiar physiological effects, is of no more use than an ordinary dose of quinine in the treatment of ague.' The use of inert preparations of conium have rendered almost worthless all previous statements with regard to the medicinal value of this plant.

"In tetanus, chorea, epilepsy, spasmodic affections of the stomach or œsophagus, and muscular tremor, this drug has produced very valuable effects.

"Epitomizing the results, the author observed: With regard to the dried leaf of hemlock, which is still retained in the British, and constitutes the chief basis of the preparations of conia in the French and other Continental Pharmacopœias, it is of but little, if any value. After careful and repeated examination of the recently dried and well-preserved leaf, it was found that Zijss—a quantity equivalent to the pint of the tincture (P. L.)—does not contain more than a grain of conia at most. Dr. Harley took ʒij of it, recently prepared, with no other result than slight alcoholic stimulation, and ʒj has often been given without producing any physiological action. The tincture of the fruit, which in the B. P. has been substituted for the tincture of the leaf, is alike inert and valueless. After using every precaution in the preparation of this tincture, fʒij of it produced no other effects than those which would have resulted from taking an equivalent amount of alcohol; these negative results were obtained in many cases.

"After careful examination of recent ext. conii, it was found that the best prepared samples only contained 1 per cent. of conia, and that 25 grains of it are equivalent to only ʒiv of the succus; in one case, 250 grains of the extract yielded but 2½ grains of pure conia, or rather less than 1 per cent. From 20 to 30 grains of this were given to patients, in whom ʒiv or ʒv of the succus produced very decided symptoms, but without any result.

"I repeat, therefore, that it is impossible by the process given in the British Pharmacopœia, and probably by any other process, to prepare an extract which shall contain more than 1 per cent. of conia. This being the case, it will appear obvious that the extreme dose recommended in the Pharmacopœia—viz. 6 grains—is insufficient to produce medicinal effects in any of the severe cases above mentioned. An ordinary dose of this extract for a male adult would be from 30 to 40 grains. The only preparation which retains the active principle of the hemlock in sufficient quantity is the succus, and this possesses the full activity of the plant and is a most valuable medicine.

"This drug, in doses varying according to the activity of the individual, from 1½ to 8 drachms, will produce the full physiological action of the plant, as I have described above. In prescribing this medicine I have regard to the *activity* of the individual; to an ordinarily active woman, I begin with ʒij, and to an active, strong

man ʒiv or ʒv , increasing the dose ʒj at a time if necessary. I find that the doses which fall far short of producing the above described effects are useless; but when we can oppose—as we may do with certainty—this powerful drug against those diseases of which I have given examples, we have a means of subduing these otherwise uncontrollable and fearful maladies.”

LECTURE II.

“In the second lecture the action and uses of belladonna formed the subject of inquiry. It was assumed at the outset, that the action of belladonna and its preparations was identical with that of its active principle atropia. The effect of small doses of the sulphate of this alkaloid is to cause increased frequency of the pulse, transient giddiness, dryness of the mouth, and dilatation of the pupil; sometimes there is delirium; in two or three hours the effect passes off.

“It was next shown that the action of belladonna was the same whether administered by the mouth into the stomach, or when injected into the skin, the only difference being in the rapidity of its action; given by the skin, the effects are developed in a quarter of an hour or less; given by the mouth, the operation is not fully manifested for half or three-quarters of an hour, and sometimes later.

“A ‘*Succus Belladonnæ*’ was prepared by a method similar to that which is used in making ‘*Succus Conii*.’

“30 π of ‘*Succus Belladonnæ*’ were administered to several adults, and the effects were precisely the same as when an equivalent dose of sulphate of atropia (viz. $\frac{1}{20}$ th of a grain) was given.

“Whether the juice of the plant, or its active principle, is given, the symptoms are the same in time, mode of accession, and duration, if equivalent doses are given, so that there can be no doubt that atropia represents entirely the *active* principle of the plant.

“The kidneys seem to be the active agents in eliminating the alkaloid from the system; it may be found in the urine 18 minutes after the injection of $\frac{1}{18}$ th of a grain of sulphas atropiæ, and it is generally entirely removed at the end of two or three hours. That the whole of the atropia is removed, when given in medicinal doses, may be proved:

“1. By the fact that 8 or 10 ounces of urine, secreted during the 2 $\frac{1}{2}$ hours that the patient is under the influence of $\frac{1}{18}$ th of a grain of the sulphate, shall contain so much of the active principle, that 12 drops of it will cause the pupil to dilate from $\frac{1}{16}$ th to $\frac{1}{8}$ th of an inch in diameter.

“2. If at the end of three hours the bladder be emptied, and the urine which is secreted directly after be examined, no trace of atropia can be found.

“To the toxicologist this elimination of the alkaloid by the urine is of great importance as it is readily demonstrated, points directly to the cause of death, and limits the question to one or two points; it is possible to detect it in the urine when only $\frac{1}{18}$ th of a grain is given, and this is probably the least quantity that can destroy a newly-born infant.

“Certain conditions interfere with the action of belladonna upon the system:

“1. Children are less susceptible than adults, and occasionally they bear very large doses, before dryness of the mouth, etc., comes on; still the stimulant effect upon the circulation and the dilatation of the pupil are as readily induced in the young as in the old.

"2. Amongst adults there is considerable variation in its action.

"3. The fixed caustic alkalies decompose the active principle of belladonna; thus if (a) caustic potash or soda be mixed a few hours previously with a dose of belladonna, sufficient to produce the full symptoms of that drug in a given patient, and administered to him, no effects will follow; if (b) the same quantity of each taken and given *immediately* after admixture to the patient, the alkali will be found to have no influence in diminishing or delaying the effects of the belladonna.

"4. These facts are true of caustic ammonia and of caustic lime. If $\frac{1}{20}$ th of a grain of sulphate of atropia, or $\frac{1}{20}$ xxx of 'Succ. Bellad.' be mixed with $\frac{3}{4}$ ij of lime-water and taken *immediately*, the full effects of the belladonna will be produced; if only $\frac{3}{4}$ vj of lime-water be mixed for a few days with the same quantity of alkaloid or juice, the operation of the drug will be delayed for a little time, and then its operation will be full and complete.

"An analysis of the urine in several cases showed that the effect of belladonna was to cause an increase of the urea, sulphates, and phosphates, and a diminution in the excretion of uric acid and chlorine; the urine also is increased in quantity and specific gravity. The increase of the urinary constituents was assumed to be the result of the excitement of the nervous centres, and, when given in medicinal doses, almost entirely of the sympathetic nervous system, and so as there is an increase in the flow of the blood through the kidneys, there is a proportional increase in the functional activity of the organ. The excessive oxidation required in the process is due to the increased circulation through the lungs, which seem to eliminate a larger amount of carbonic acid from the blood, as it is passing rapidly through them.

"With regard to the therapeutical uses of belladonna, Dr. Harley showed that it must be looked upon: 1. As a diuretic; 2. As a means for increasing the oxidizing process within the body; 3. As a direct stimulant to the sympathetic nervous system.

"As a *diuretic* it is a most hopeful remedy in cases of suppression of urine, accompanied or not by uræmic symptoms.

"In a case of chronic renal disease, it was found that the urine, which before the injection of $\frac{1}{8}$ th of a grain of sulphate of atropia contained 1 grain of albumen in 1000 grains, only contained $\frac{1}{2}$ a grain in an equal quantity of urine two hours after the experiment; four days afterwards no trace of albumen was found in the urine.

"In promoting the *oxidizing processes* in the system, it is applicable in the uric acid and lactic acid diatheses.

"On injecting $\frac{1}{60}$ th or $\frac{1}{40}$ th of a grain of the sulphate of atropia in the neighborhood of painful joints in rheumatic fever, there resulted immediately amelioration in the pain, and the duration of the disease seemed to be shortened.

"As a *cardiac stimulant* it is most valuable; there is no medicine in the whole materia medica which can directly and immediately increase the force and rapidity of the heart's action to one-fourth the degree that belladonna is capable of doing.

"In the collapse of cholera, in syncope from asthenia, and in cases where there is great loss of blood, this drug seems capable of arousing the heart's action.

"When administered as a cardiac stimulant, atropia should be given in doses sufficient to arouse the heart's action without producing more than slight and transient dryness of the mouth; for this purpose, when used subcutaneously, the $\frac{1}{60}$ th of a grain will generally suffice.

LECTURE III.

"In the third and last lecture attention was directed to the action and uses of hyoscyamus, and the influence of opium when given in combination with the above-named drugs.

"The preparation of hyoscyamus used in the experiments was the sulphate of hyoscyamia, prepared by the author from the fresh seeds of the biennial plant. It is of a light-brown color, imperfectly crystalline, and very deliquescent.

"One of the earliest indications, on administering a small dose of this alkaloid, is a rapid decrease in the frequency of the pulse; and this depression is not accompanied by any alteration in volume or power. Schroff states that $\frac{1}{16}$ of a grain of hyoscyamia reduces the pulse from seventy-nine to eighteen; but, in the lecturer's experience, the pulse had never fallen below forty-two beats in a minute.

"The following are shortly the effects of injecting subcutaneously small quantities of the sulphate of the alkaloid: At first slight increase in the frequency and power of the pulse; then a considerable diminution, accompanied by giddiness, sleepiness, and dilatation of the pupil; in some cases slight twitching, dryness of the mouth and air-passages, and delirium.

"When hyoscyamus, or its active principle, is absorbed by the alimentary mucous membrane, precisely similar effects follow, and the action is usually manifest within an hour.

"A 'Succus Hyoscyami' was prepared from some very fine biennial wild plants, analogous to the 'Succus Conii.' Three ounces of this produced symptoms of equal intensity to those mentioned above. Two ounces of the 'succus,' in a youth aged seventeen, caused an acceleration of the pulse of forty beats, with dryness of the mouth and sleepiness..

"In the same individual one ounce of the tincture of hyoscyamus produced similar effects, but in a minor degree.

"Children will often take a very large quantity of henbane: an ounce of the above-mentioned succus, or an ounce of the tincture, has been given to children of twelve years of age, with no other effect than to accelerate the pulse thirty or forty beats for an hour, and then it gradually declines. Doses varying from $\mathfrak{z}\text{ij}$ to $\mathfrak{z}\text{j}$, of the juice and tincture, have been given continuously to young patients, without producing any dryness of the mouth, or any other symptom beyond increased frequency of the pulse and dilatation of the pupil.

"In the adult from $\mathfrak{z}\text{vj}$ to $\mathfrak{z}\text{viij}$ of the tincture, or ten to fifteen grains of the recent extract, are usually sufficient to produce decided dryness of the roof of the mouth, acceleration of the pulse, dilated pupil, and a moderate degree of somnolency.

"In its action upon the system, hyoscyamus appears to be intermediate between opium and belladonna, possessing, as it does, on the one hand, somniferous properties, second only to opium itself; and, on the other hand, having an influence upon the sympathetic nervous system, as indicated by the pulse, second only to that possessed by belladonna; although, like opium, in some respects, its influence upon the pulse, pupils, and mucous membrane of the mouth, place it in strong contrast with that drug; and, on comparing it with belladonna, its deliriant or somniferous properties are found to preponderate.

"Like atropia, this alkaloid may be found in the urine twenty-two minutes after the injection of $\frac{1}{16}$ th of a grain of hyoscyamia subcutaneously, and two hours and

a half after 3ij of the "succus" were taken into the stomach. The urinary constituents do not appear to undergo any alteration. With both these drugs, a paralyzed condition of the bladder often results from their administration. It is generally stated that belladonna and opium are antagonistic, and little hesitation would be felt, in a case of poisoning by either, to give an equal dose of the other as an antidote. To these statements, and to the conclusions derived from them, Dr. Harley brought forward very strong objections.

"Experiments were made upon man, the horse, and the dog.

"On the horse a series of complete observations were made, and the effects (1) of atropia and morphia separately administered, and (2) of the combined action of the same doses given simultaneously, were carefully noted.

"When opium or morphia is given to a horse, its deliriant action is more marked, and far exceeds its hypnotic effects. In this respect it differs much from its usual influence on man. The pupils never contract under the influence of opium, and the secretion of the mouth is much increased.

"The operation of atropia upon this animal is identical with that observed in man.

"Although half a grain of morphia, when given alone, does not affect the horse, yet, when injected in combination with $\frac{1}{12}$ th of a grain of sulphate of atropia, it prolonged and increased the symptoms produced by the latter drug.

"Four grains of morphia were given to two horses, and the result was a powerful stimulant effect on each, with increased frequency of the pulse, but no delirium.

"On another occasion four grains more were introduced, but at the same moment, and by a separate puncture, $\frac{1}{12}$ th of a grain of atropia,—the result was to hasten the action of the opium, so that at the end of thirty minutes a state was produced identical with that caused by morphia, *alone*, at the end of an hour, and in forty minutes was greater than at any time during the action of the opium alone. Superadded to the morphia symptoms, were dilatation of the pupils and dryness of the mouth. On the other hand, the morphia intensified and prolonged, for at least five hours, the operation of the atropia; and a quantity of atropia too small to produce cerebral effects, will, when combined with four grains of morphia, intensify its action so as to produce delirium, although the latter dose will not do so singly. Thus, so far from exercising an antagonistic influence on each other, their combination is greatly to increase the effect of either.

"Twelve grains of morphia were given to three horses, and the symptoms were as equally marked as when four grains of morphia and two grains of atropia were given simultaneously; the only difference being that in the latter case there was greater dilatation of the pupil, blindness, and parched mouth—symptoms peculiar to the action of belladonna.

"In man similar results were obtained."

Present State of Therapeutics.

Sir THOMAS WATSON, Bart., M.D., in an address delivered at the opening of the Clinical Society of London (*London Lancet*, January 18th) says: Of Therapeutics as a trustworthy science we have as yet only the expectation. Our profession is constantly fluctuating on a sea of doubt about questions of the greatest importance. Old and obsolete controversies have been revived with all their former extravagance in our own time. Many of us can recollect when bloodletting was

reckoned the summum remedium against all forms of inflammatory disorders, which were to be starved out by the strict enforcement of the antiphlogistic regimen. Now there are many who hold that to deprive a patient of an ounce of blood, is to sap his strength and to aggravate his danger. One generation extols mercury as the sole unfailing remedy for syphilis; the next attributes all the worst evils which follow in the train of that hateful disorder to the very mineral which has been administered for its cure. This uncertainty, this unseemly variation and instability of opinion is a standing reproach to the calling we profess. It has shaken the confidence of many men, of men both able and thoughtful, and driven them to ask whether any kind of medication, other than the *vis medicatrix naturæ* is of any real value. Dr. Watson shows the importance of the investigation, so far as is compatible with the safety and comfort of the sick, of what it has become the fashion to call the natural history of disease. The great necessity of carefully gathered and collated clinical experience, from competent and accurate observers, compared together and discussed by a variety of keen, instructed minds, skeptical in the true sense of the term, is strongly urged.

Alcohol Not a Stimulant.

W. L. SCHENK, M.D., Franklin, Ohio, in the February number of the *Cincinnati Lancet and Observer*, gives his views on the medicinal action of alcohol, as follows:

Alcoholic "stimulants" temporarily relieve spasmodic pain and painful digestion, because they produce anæsthesia, a want of sensation in the gastric nerves. In low fevers the other portions of the body have become inactive, whilst the nervous system, the "ultimum moriens," remains active and sensitive. With alcohol we check excessive nervous action, diminish the destructive metamorphosis of tissue, and give time for nutritives and tonics to restore the lost balance of the functions. After operations and injuries its physiological effects are those of an anæsthetic; it acts alike upon the shock and pain by blunting sensibility, not as a stimulant. Lehman in his *Physiological Chemistry* says, "We cannot believe that alcohol, theine, &c., belong to the class of substances which are capable of contributing to the vital functions." Vierordt and Prout found that the excretion of carbonic acid, both absolutely and relatively, was diminished by even a moderate use of spirituous liquors.

The U. S. Dispensatory speaks of alcohol as a powerful diffusible stimulant, good in some cases of extreme exhaustion. If good in some, why not in all? Why not as good in anæmia, phthisis, and the collapse of cholera, as in the latter stages of enteric fever? Because it adds nothing to vitality; is incapable of stimulating vital action. In anæmia it neither enriches the blood nor aids in the digestion of those articles capable of doing so; in phthisis its only possible good is its influence on the assimilation of fat; in choleraic collapse if taken into the circulation, it only adds to the paresis already produced in the pneumogastric nerve; but in these fevers it allays nervous excitement and the excessive destructive change of tissues. Alcohol cannot be converted into nerves or muscular tissue; it cannot give strength; whilst it retards the transformation of the materials that build these up, it assists in holding fatty matters in solution, and thus aids in the assimilation of fat; hence we may understand how it may cause an increase of bulk while there may be a degeneration of organized tissue and a decrease of vitality. Alcohol, from its affinity for water, causes its withdrawal, coag-

ulating the albumen and fibrine, and condensing the tissues. It has a greater affinity for nerve-matter than for any other portion of the body, as may be shown from the larger quantities of alcohol found in the brains of those who have drank it, than in an equal weight of any other tissue; in some instances being found in the brain when not detected in other parts of the body.

Alcoholic Stimulants in Shock.

D. W. YOUNG, M.D., Aurora, Illinois, in a paper read before the Fox River Medical Association (*Chicago Medical Examiner*), asks: "Why do we administer alcoholic stimulants in shock? We all know that the practice of giving alcoholic stimulants in all cases of shock, whether physical or mental, has become so common, that not only all physicians, but all the public, fly to the whiskey and brandy bottles as the elixir of life—the great restorers of health and animation. So long as this opinion prevails, every effort to stay the progress of intemperance, with its attendant evils, disease, poverty, insanity, and crime, will of necessity be unavailing.

"Is this practice in conformity with the best known medical facts—facts of undoubted observation and experience? Is it based upon scientific medical investigation; or is it simply custom handed down to us from the dark ages of the profession? To investigate this subject understandingly, it will be necessary to inquire what shock is; what the physical condition that produces it; what the lesion to be remedied; also what the known or supposed physiological action or effects of the alcoholic stimulants are upon the human system.

"Professor Dunglison says: Shock is a 'sudden or instantaneous depression of organic, nervous, or vital power, often with more or less perturbation of body and mind, passing either into reaction or into fatal sinking, occasioned by the nature, severity, or extent of injury, or by an overwhelming moral calamity.'

"The symptoms of shock are very similar in all persons, and from all causes. All fall to the ground; become suddenly cold; are bathed in a cold sweat; with deathly paleness; a sunken or collapsed countenance; irregular, gasping, and difficult breathing; are unable to move, speak, or think; frequently become convulsed; vomit; and, after a longer or shorter period, reaction or fatal sinking supervene, life either ceases, or healthy action is restored and life continues. This depressed condition of the organic, nervous, or vital powers we denominate shock, and the question now is, Are alcoholic stimulants the *sine qua non* to remedy this condition?"

Dr. Young quoting from Stillé, Orfila, Dunglison, Copeland, and others, recounts the statements of the most eminent authorities, showing that the action of alcohol is to cause *depression* and in large doses *death*. When the blood is found congested in the heart and lungs, all these eminent authors and teachers ascribe to alcohol, either as a primary or secondary effect, an enfeebled action of the heart and circulation. Besides these, we have the very valuable and interesting experiments and concise report of Professor N. S. Davis, of Chicago, who called both the sphygmograph and thermometer to his aid.

Professor Davis shows by his experiments, that under the influence of alcohol, the frequency of the pulse is at first increased, but afterwards diminished; at the same time the force of the heart and pulsations is weakened. The heart has less power to propel the blood through the arteries, and a congestion of the radicles ensues.

Dr. Davis, in commenting upon the results of his experiments, says: "It will be seen that each pulse expands the artery to a greater extent and more suddenly than before the alcoholic liquid was taken, and that the commencement of the contraction is equally more sudden, while the whole line becomes more wavy or irregular; thereby much resembling the *pulse lines* (as shown by the sphygmograph) when the arterial coats are weakened by fatty degeneration, or in such diseases as are accompanied by enfeebled capillary circulation, like typhus and typhoid fevers."

Here I desire to add that this fact was very forcibly and strikingly illustrated by comparing them with some fifteen or twenty plates presented to the Illinois State Medical Society, at Springfield, by Professor H. A. Johnson, of Chicago, who also presented the results of his experiments with the sphygmograph, in a large number of cases and different diseases. Professor Johnson's plates showing the *pulse lines*, as recorded by the sphygmograph, in a number of cases of typhoid fever and chronic diarrhoea, were apparently identical with those presented by Professor Davis, as recorded by the sphygmograph in his experiments with alcoholic stimulants. This fact was very apparent, and was noticed and commented upon by numerous and various members of the Association. Both sets of plates showed, most *unmistakably, enfeebled action of the heart*, notwithstanding the one was recorded while the patient was laboring under the influence of four ounces of Bourbon whiskey, and the other after the patient had suffered several weeks under the depressing influence of typhoid fever and chronic diarrhoea.

In the inquiry as to the effect of alcohol on the temperature of the body, Dr. Young refers to the experiments of Vierordt and Prout, showing a diminution of the excretion of carbonic acid during the use of alcoholic stimulants. Dr. Bouchardat found when alcohol was introduced into the system in excess, that the blood in the arteries presents the aspect of venous blood, showing that it has been prevented from undergoing the proper oxygenating process.

From the foregoing considerations, then, we may conclude that the effects of alcohol as a heat producing material, at best, could only be advantageously experienced when the blood does not contain a supply of other matters waiting for removal by the respiratory process. Is it not the case that in all cases of shock, the respiratory process is but imperfectly performed, and that as a necessary consequence, there must be an excess of carbonic acid retained in the blood? If such is the fact, can it be a logical procedure to administer such articles as will still further increase the already sedative influence of an excess of venous blood?

Dr. John Davy found that wine, so far from increasing the temperature of his body, caused, on the contrary, a very visible diminution of its heat, and, moreover, that the diminution was proportioned to the quantity of wine taken—the greater the quantity, the more marked being the decrease of temperature.

In 1848, MM. Dumereil and Dumarquay, in making numerous experiments on intoxicated dogs, always found their temperature uniformly reduced.

Two years later, 1850, Professor N. S. Davis, of Chicago, instituted a series of experiments, the results of which showed unmistakably that the presence of only a few ounces of either fermented or distilled drinks, in the human system, was sufficient to produce a positive diminution of temperature. To still further verify these facts, Professor Davis again, on the 6th and 11th days of April, 1867, instituted another series of experiments, which also produced the same results. He found that a strong healthy man, who took four ounces of Bourbon whiskey diluted

with sweetened water, suffered a depression in temperature. The thermometer fell two degrees in an hour.

Dr. Young says in conclusion: I simply desire to add my own views and experience upon this subject. While I have never instituted any scientific investigations, nevertheless, I have had (during a very extensive surgical experience, both in the army and private practice) a pretty good opportunity of witnessing the effect of this agent upon persons laboring under shock. My experience has been, that alcoholic stimulants are very liable to produce extreme nausea, vomiting, and depression of the vital powers. I have thought that they retarded reaction and increased the depression. So marked have been these results, and so distressing their effects, that I have, long since, avoided their administration. I have substituted hot coffee, hot teas, and hot broth, when obtainable, and have been much better pleased with their effects.

Therapeutics of Pain.

Professor WILLIAM A. HAMMOND, of Bellevue Medical College, New York, in his lecture on the above-named subject, reported in the *New York Medical Gazette*, appreciates the value of various drugs as follows:

1. In nervous headaches.

Oxide of zinc is of great value: ordinary dose two grs. three times a day after meals: maximum dose five grs. It is best given in form of pills.

Nux vomica is preferable to strychnia. The dose is $\frac{1}{4}$ gr. after meals. If the patient is chlorotic it is well to combine a grain of ferri redact. and $\frac{1}{4}$ gr. sulph. of quinine.

Bismuth, in the form of subcarbonate, will often take the place of oxide of zinc. Dose, two grs. after each meal. Bismuth probably assists digestion more than any mineral tonic, and is of use when there is gastric disturbance.

Bromide of Potassium is serviceable when the nervous system has been irritated; when exhausted it does harm.

Bromide of Ammonium is similar to the brom. of potas. in its action; dose need not be so large. Dr. H. often uses both combined.

Opium and its preparations are rarely of value in this disorder. If used the hypodermic method is best.

Narcein was brought to the notice of the Academy of Medicine, Paris, a few years ago by Claude Bernard. Dr. Hammond refers to the unfavorable notice of this article by Dr. Da Costa, but still thinks that given in large doses it has a decided hypnotic effect.

Phosphorus is very useful in all forms of nervous headache. It is difficult of administration, and leaves an unpleasant odor about the person. The phosphates do not produce the effects of phosphorus. The best results are obtained from phosphoric acid dilute, in doses of thirty minims largely diluted.

Arsenic, as a nerve tonic, stands next to zinc in value. Fowler's sol. has generally been used, but of late the arsenious acid has been given in doses of about $\frac{1}{10}$ th of a grain; particularly in cases of hallucination dependent on exhaustion.

As to the value of *Galvanism* there are two very diverse opinions: one that it is useless; the other that it is nearly a panacea. The truth lies probably on the middle ground. We cannot act directly upon the brain, to any considerable extent, by the induced current or by reflex action. Dr. H. advises always the con-

stant current; being careful to avoid too great intensity lest amaurosis be produced.

2. In the treatment of *Neuralgia*.

Belladonna, although at one time much overlauded, is a very efficient drug. Dr. Hammond has not used atropia often, as the dose is difficult to graduate. The use of belladonna is chiefly to change the habits of the system. You may begin with doses of $\frac{1}{4}$ th grain of the extract, and increase as necessary.

Hypophosphites are useful; may be given in doses of from ten to twenty grains. They act by setting free phosphorus in the stomach.

Hypodermic Injections of Morphia may be used during the paroxysm. In their use avoid the face; a good point is the inside of the arm.

Aconite is next in value. Simply rub the tincture upon the painful part until a pricking is felt. The action is often very powerful. Dr. H. once caused temporary paralysis of the arm in a lady by the too free application of the tincture.

Chloroform may be used externally, internally, or by inhalation not carried to insensibility. Repetition of inhalations may break up the paroxysm.

Lime Inhalations in Pseudo-membranous Croup.

BENJAMIN B. WILSON, M.D., Philadelphia (*Med. and Surg. Reporter*, April 4th), reports the use of lime inhalations in a very severe case of inflammatory croup. The child æ t. three and a half years, had been attacked three days previous with hoarseness and high fever. When seen by Dr. W. he was almost in *articulo mortis*. Speech, except in the faintest whisper, was impossible. The respiration was hurried and gasping, accompanied by that peculiar shrill whistle on inspiration which is characteristic of false membrane. The surface was bluish, and the lips and nails were quite blue, showing that the aeration of the blood was considerably impeded. The child had been freely vomited with the co. syrup of squills. His hips and extremities were now immersed in a hot mustard-bath, turpentine stupes applied to the throat and chest, and a powder containing calomel, ipecac., and sal ammoniac, was administered every hour. The inhalation of lime vapor was then commenced, and having been pursued perseveringly, notwithstanding the continued opposition of the child, an hour and a half, the little patient began to respire with less effort and gradually fell into a comparatively comfortable sleep. The remedy was continued with little intermission, a fresh lump being slacked at least every thirty minutes during sleep, and as often during waking hours as the child could be induced to respire the vapor. During the daytime but little change occurred; a decided exacerbation took place in the evening and early part of the night, which was met by the continued use of the remedies above indicated. Convalescence was firmly established about thirty-six hours after treatment was commenced. In the second child, a little girl of 16 months, attacked precisely similarly, a similar course of treatment, commenced a few hours after the attack, was followed by a rapid recovery. The inhalations can be administered, as originally suggested by Dr. A. Geiger, Dayton, Ohio (vol. xiv, 1866, *Med. and Surg. Reporter*), by slacking lime in a pitcher; a vapor-bath being extemporized by quilts or blankets supported by chairs, the head-board, or props, and including the whole body. Hot water produces very active chemical action with the evolution of a great deal of heat and dense watery vapor strongly impregnated with hydrate of lime.

Atropia used Hypodermically.

Dr. DA COSTA (*Pennsylvania Hospital Reports*, art. xxi), reports two instances of the successful use of the hypodermic injection of sulph. of atropia, in cases of muscular rheumatism. The first, a servant girl, had been suffering for some six weeks previous to admission, with pain in the various joints, and swelling of the left knee and ankles; most of the time since, has been confined to bed. At present, there is no swelling of any joint, but stiffness, and pain on motion in left hip, knee, and ankle. She was treated with iodide of potassa, and pulv. Doveri. Soon after admission, a stiff neck was noticed, which in a few days presented the ungainly appearance of marked torticollis. Frictions and ordinary remedies were of no avail. An injection of $\frac{1}{60}$ of a grain of sulph. of atropia, was now used just over the rigid parts, resulting at once in a decided amelioration. The injections were repeated three successive days, and were followed by perfect relief. They were afterwards used over the stiff and painful joints with no beneficial result. A complete recovery took place in this case by persisting with the constitutional treatment.

The second case was one of lumbago, in a sailor, æt. 40 years. Treatment with diaphoretics, opiates, and friction, was without effect. The muscles in the lumbar region, along the spine, were quite rigid and painful on pressure. Somewhat less than $\frac{1}{40}$ of a grain of atropia was injected near the affected part. The constitutional effect was marked. In about fifteen minutes the man became giddy; his throat very dry; his pupils dilated. This state lasted some time and alarmed him; but when it had passed off, the pain and rigidity of the muscles were gone; nor did they return although soon after he went upon a voyage in which he was exposed to bad weather.

Action of Atropine.

Dr. JOHN HARLEY, in a note to the *London Medical Times and Gazette*, April 18th, says of Atropine: In small doses, a powerful stimulant action upon the heart and bloodvessels is the only appreciable effect of the drug upon young children and lower animals. The red suffusion of the skin described as a "scarlatina-like" rash, is due to the sudden repletion of its capillaries, owing to this action, and is particularly observable in infants. Beyond this suffusion, Dr. Harley has never noticed the approach to such a rash in any of the patients he has treated with belladonna.

Therapeutic Action of Digitalis.

EDWARD MACKEY, M.B., Joint Professor of Mat. Med., Queen's College, Birmingham (*British Medical Journal*, May 30), reports clinical observation of the use of digitalis, with cases. In reply to the question, May we expect digitalis to strengthen, and make regular a feebly beating heart, or must we dread its depressing pulsation to the verge of extinction? he says, "We may expect the former in a large number of cases." Quoting opinions, he states "that Dr. Gull's clinical experience, clearly settled in his own mind, that digitalis was capable of diminishing the frequency of the heart's beat, and increasing the power of the heart's impulse; and is especially useful in cases of disease of the left side, in which the action is very rapid and feeble." Dr. Wilks remarks of a case of dilated enfeebled heart: "This was just one of those cases where digitalis might be expected to do good." Dr. Fuller says,

"The cases of heart disease most benefited by digitalis, have been those in which the heart has been weak and dilated, pulse feeble and irregular." *Effects of Complications.* (a.) A state of fatty degeneration, if far advanced, contraindicates its use; for its subject is liable to sudden death. In dubious cases, commence with small doses (5 μ), better combined with ether; watch carefully; increase gradually; stop occasionally. (b. and c.) Mitral regurgitation and mitral obstruction do not contraindicate its use. (d.) Aortic regurgitation is a contraindication. Dr. Mackey does not think, from the experience of the profession, although the reasoning is not clear, it is prudent in this condition to use the drug. (e.) In aortic obstruction, however, this remedy may be most useful. (f.) Hypertrophy, as a result, must be referred to other lesions for its indications. This drug is not likely to benefit functional disorders, palpitation, etc. As to *preparations*, Digitaline is uncertain; the infusion is apt to nauseate. In preparing the tincture, great care should be used in the selection and keeping of the leaves. Doses: It is better to commence with small doses (5 μ to 10 μ); sometimes can be rapidly increased to 30 μ . As a general rule, such a dose is often enough repeated twice in the twenty-four hours.

Therapeutical Uses of the Alkaline and Earthy Sulphites.

At a meeting of the Philadelphia Co. Medical Society, February 12th, 1868 (*Medical and Surgical Reporter*, March 28), the above-named subject was presented for discussion. Dr. Bolles gave a brief résumé of the medical history of the sulphites since being brought into use by Chaussier and Bielt of Paris, twenty-five years ago. The attention of the profession was again called to them by the scientific investigations of Professor Polli, of Milan, some eight or nine years since, carefully confirmed and brought to notice by Dr. De Ricci, of Dublin. Their effects in general, and the safety of their administration, are now widely known, and their value has been confirmed by the testimony of many eminent men in various parts of the country. Dr. Polli recommends for internal use the sulphite of magnesia, as best tolerated by the stomach.

Dr. Baxter, of Iowa, reports one hundred cases of intermittents treated successfully with the sulphites alone.

Dr. N. S. Davis, of Chicago, states, that during the past fifteen months, he has successfully used these remedies in such cases as were supposed to depend on blood poison. During that time he had used them in eight cases of confluent small-pox, eleven of a most severe grade of idiopathic erysipelas, three of cerebro-spinal meningitis, and four of puerperal metritis; all of whom recovered save one, — a child convalescing from small-pox attacked with pneumonia.

Dr. Burns, a medical officer at a post which has been an intermittent locality for a century, reports a great diminution of the disease, and of the amount of quinine used since combining it with the sulphite of soda.

Dr. Nebinger reports personal experience commencing in June, 1864. He has seen a large number of cases of erysipelas in his practice. He has used the bisulphite of soda, both externally and internally, and considers it, *par excellence*, the remedy for this disease; the rapidity with which this salt will occasionally control an attack of erysipelas is *wonderful*. Dr. Nebinger prescribes fifteen grains dissolved in syrup and water, every one to two hours.

W. A. GROVE, M.D., Maquon, Illinois (*Journal of Materia Medica*, May), states,

that he has used the *hyposulphite of soda* in various cutaneous diseases, for the past two or three years, with unvarying success. He considers it as valuable in scabies as sulphur, and a much more elegant preparation. A child having a severe form of scabies complicated with impetigo, of eight months' standing, accompanied with emaciation and loss of appetite, recovered in three weeks under the internal use of citrate of iron, and a wash of hyposulphite of soda,—one ounce to eight of water,—used twice daily. Dr. Grove has used it also as a topical application in the sore throat of scarlatina, with success. Internally, the Doctor has used it in intermittents, in doses of half a drachm in peppermint-water, failing to cure only two cases out of seventy-eight treated.

Dr. JOHN H. GRISCOM, of New York, in an essay read before the New York State Medical Society, February 4th, 1868 (*Medical and Surgical Reporter*, February 18), speaks in high terms of the therapeutic value of the sulphite of soda.

"My experience with the remedy referred to in the treatment of diarrhœa, dysentery, cholera morbus, as well as dyspepsia, has been most decidedly beneficial. From five, to twenty, forty, or sixty grains, according to the age of the patient and the severity of the symptoms, administered two, four, or six times a day, have, in almost every instance, had the effect of speedily arresting the discharges, and relieving the nausea and the colicky irritation. I could cite several cases in which its efficacy had proven as prompt as any other remedy before tried, and in not one have I seen any bad effect or failure. As to its *modus operandi* in these complaints, it seems to act in the double capacity of an antiseptic and astringent. On the latter principle, its influence appears sometimes almost as speedy and efficacious as opium. In cases of constipation derived from torpor of the liver, or deficient peristaltic power of the intestinal tube, its corrective influence over almost all functions aids to restore a healthy action of the muscles of the bowels.

"In dyspepsia, its efficacy has been most marked, especially when the disorder is accompanied with flatulence and eructations of food. These symptoms are doubtless the result of the decomposition and fermentation of the foreign material in the stomach itself, from one or more of the causes before mentioned. In such cases the sulphite salt operates, in the first place, as a direct and powerful restorer and preventive of the decomposition of the food, in the same manner as it does on the outside of the body; and, in the second place, its acid constituent, either in its original sulphurous form, or by its advancement to the sulphuric form, doubtless compensate for some of the deficiency of the gastric juice, and in this way completes the digestive process as far as the gastric function is concerned. The form of administration which I have found most useful and successful in dyspepsia and its attendant circumstances, is in combination with tonics and carminatives, avoiding alcoholic stimulants on all occasions. My chief combination is tinctures of cinchonæ comp., and cardamoms, and syr. aurantii, with the sulphite salt in separate solution, combining the two at the time of administration."

Dr. Griscom, although claiming no experience in this disease of late years, recommends with great confidence the use of the sulphites in Asiatic cholera.

"We have several reports in medical journals, of its efficacy in intermittent and typhus fevers, in scarlatina, small-pox, and measles, the theory of its action in which is, that the acid is absorbed into the blood itself, and therein exerts its antiseptic properties directly upon the *materies morbi* which give rise to the disorders.

"Even in yellow fever, the real chemico-physiological cause of which has not yet been satisfactorily made known, it was last summer, during the prevalence of

that disease in the West Indies, reported by the medical officers of the British fleet, to have produced highly favorable results.

"Its value in erysipelas I have had the gratification of testing in several cases. In one case in the New York Hospital, found on the face of a delirium tremens patient, a few doses of the salt wholly relieved that symptom in twenty-four hours."

Dr. Griscom, after referring to the researches of Professor J. H. Salisbury, on rheumatism, and his lucid exposition of its several varieties, advises the use of the sulphites in this disease, on analogous grounds. In forms of cutaneous troubles, as furuncles, dependent upon gastric derangement, the administration of sodæ sulphis, combined with carminatives is a very rapid and perfect remedy.

"During the preparation of this essay, the most extensive and violent case of urticaria that ever fell under my observation, came under my care. It was a lady aged seventeen, who had suffered greatly for several days with nausea, sleeplessness, an eruption covering almost the entire cutaneous surface, and accompanied with excessively violent itching. In twenty-four hours, a few doses of forty grains each, of sodæ sulphis, combined with carminative tonics, and a local external application of a solution of the salt, relieved all the symptoms to a great extent, and in forty-eight hours, they all wholly disappeared, leaving the patient in good health.

"Another application of this salt, which I have found both highly interesting and valuable, is, in the case of infants, by whom their natural food, the mother's breast-milk, is frequently rejected.

"A dose of two to five grains in combination with a few drops of the tinct. card c., sweetened with a little syrup aurantii, has in many instances proved directly successful in causing a retention and assimilation of the stomach's contents, when administered soon after imbibition, thus greatly promoting the health and strength of the juvenile.

"There are three forms of this salt, viz., the sulphite, the hyposulphite, and the bisulphite—the first of which has been my principal dependence, though the others, when employed in proportionate quantities for the supply of the acid constituent, are equally useful."

Glycerine as an External Remedy.

Dr. JOHN H. GRISCOM, in the essay referred to in the preceding article (*Medical and Surgical Reporter*, February 18), says: To Dr. J. Marion Sims, whose experiments were made in uterine disorders, is accredited the first intimation of the power of glycerine, through its affinity for aqueous fluids, of capillary drainage, depleting the tissues with which it comes in contact, and leaving a clean, dry and healthy surface. Dr. Griscom, on this hint, resolved to test its properties in other localities where there existed inflammation of the tissues, *e. g.*, furuncles, erysipelas, ophthalmia, nasal inflammation, urethritis, etc. In not one of a large number of cases, had he been disappointed in the alleged tendency to draw off the serum, even through the perfect integument. The effect has been almost as uniformly demonstrative of its depletory results, as if the blood itself had been removed from the part; in fact, glycerine may be regarded as a good substitute for leeches and blisters. The Doctor illustrates his views by cases of the successful use of this article, in non-specific urethritis, furuncle, erysipelas, threatened abscess, etc., inflamed states in which it often abated the disease and relieved without suppuration. In many cases the internal treatment by the sulphites was also used.

Therapeutic Value of Narcein.

Dr. J. M. DA COSTA, in the *Pennsylvania Hospital Reports*, art. vii., gives the results of the careful clinical trial of narcein, at the Pennsylvania Hospital, in a number of cases, ten of which are reported. The experiments were made in view of the assertion of not a few observers, that in this agent we possess a remedy which relieves pain, quiets irritation, and causes deep sleep without occasioning nausea, or headache, or constipation, which is so apt to follow the administration of the usually employed opiates. The drug employed was the production of the laboratories of three different firms, German, English, and American. No difference was observed in the action. The narcein of Powers & Weightman, which was chiefly used, was an admirably-looking specimen, consisting of very delicate, silky needles. It was prepared with much care and subjected by them to the published chemical tests. The article furnished was chemically examined at the Hospital, and answered well to the description which Robertson gives of narcein. In its slight degree of solubility it differs from that used by Bernard, who states that it is more soluble than the muriates of codeia or morphia. Mr. Weightman states that on account of the treatment it is subjected to in purifying, it is highly improbable that morphia should be associated with it; but narcein and codeia crystallize together much more readily than narcein alone, and to separate them is attended with trouble. The experiments were made with a perfectly clear solution with muriatic acid, or acetic acid, principally the former. On account of the local irritation, due to the amount of acid required in dissolving, it was tried but a few times hypodermically. It was given in doses varying from $\frac{1}{4}$ grain up to two and a half grains, to those who had used opiates freely, and to others who had seldom used them, and only in small doses. The general results arrived at are these: On the skin it produced but little effect, far less perspiration than morphia, or the other ingredients of opium. It does not as a rule give rise to headache, or nausea and vomiting; but it is an exaggeration to say that these effects do not occur. Moreover, they seem to happen in women more constantly, or markedly than in men. It does not constipate, may even relax the bowels.

It is not an excitant; yet the face is uncommonly flushed after its use in decided doses. Scarcely any action on the pupils is observable.

No marked influence on the temperature, respiration or pulse is perceptible. So far as noticed, it somewhat lowered the temperature and lessened the pulse; the latter not, however, constantly. No such decided effect as has been ascribed to it, on the urinary organs, was met with. In so far as it was seen to have any action, it seemed to diminish the tendency to frequent micturition, rather than to suppress the amount of the secretion.

And with reference to its soporific and anodyne qualities, it appeared, in doses in which morphia is prescribed, totally destitute of either, and in large doses uncertain and often palpably inert. It does not allay irritation.

Ipecacuanha in Dysentery.

JOEL C. HALL, M.D., Vicksburg, Mississippi (*Med. & Surg. Reporter*, February 15th), states that the above-named remedy, in a large number of cases of *acute dysentery*—many of them in hospital—has, during the past year, proved eminently valuable. A few hours after its administration the tormina, tenesmus,

fever, and restlessness gave way, the discharges lost the peculiar character of dysentery, blood and slime became feculent, and assumed a dark, homogeneous cast, together with a very offensive smell. Profuse perspiration followed, and quiet sleep, from which, after several hours, the patient awoke, feeling very much improved. In but one case was a repetition of the remedy required. Diarrhoea, simple laxity of the bowels, or complicated with other morbid changes, as extensive ulceration, was aggravated by the use of ipecac. *Treatment*: Half an hour before giving the ipecac., thirty gtt. tinct. opii were administered—water and other drinks prohibited. Half a drachm of pulv. ipecac. was then given in six pills at one dose; and fluids, for several hours afterwards, forbidden. Nausea and vomiting rarely followed. Amelioration of the symptoms ensued in from three to nine hours, and the patient entered at once upon convalescence. Injections of a strong decoction of green tea is a good adjunct to the treatment.

GEORGE S. KING, M.D., Alexandria, Virginia (*Medical Record*, March 16th), reports the following case treated at the Baptist College Hospital, Richmond: The patient, pale and emaciated, had suffered for about a month with dysentery previous to admission, and had been harassed since with hourly and half-hourly calls to stool, day and night, for a week. His stools were bloody, rice-water, and purulent. Ordinary remedies had been tried, and failed. The plan used by E. S. Docker, English Naval Surgeon, was pursued. Two grains opium an hour, a sinapism to the epigastrium half an hour in advance, and then a heaping teaspoonful of powdered ipecac., was administered in water. No vomiting or retching followed, and in less than four hours he had a copious consistent fecal stool. In the course of the next five days, two doses, one-half teaspoonful each, of ipecac., were given, without opium, with sinapism. Discharged, cured, in a month. Dr. King had like success with other cases, though he did not resort to this treatment until the usual doses of Epsom salt had failed.

Iodoform.

The Paris correspondent of the *Medical & Surgical Reporter* (February 22d), makes mention of the use of iodoform by M. Besnier, as an external application in slowly healing wounds, syphilitic ulcerations, and soft chancres, to allay pain and promote cicatrization. The iodoform, reduced to a fine powder, is placed on the surface of the wound (previously washed); a piece of linen dipped in glycerine is then placed over the powder. For ulceration of the uterine neck, the application must be made by insufflation, and the powder retained by dry lint. Insufflation must also be employed in ulceration of the throat and nasal passages; but the dose must then be smaller, and it is well to combine with it some other powder, as bismuth. In a previous letter, the use of a suppository, compound of butter cacao ten grammes, iodoform fifty centigrammes, in a case of cancerous tumor of the uterus, by M. Demarquay, at the Maison de Santé, is reported. The patient was perfectly exhausted with hemorrhage and pain. A baselated tumor occupied the uterine orifice. No benefit was derived for several days, until the suppository was pushed into the centre of the tumor, when the pain ceased as if by enchantment. The suppository was introduced every two days for three weeks, and, although it did not prevent the march of the disease, the comfort of the patient was undisturbed to the last moment.

The Nature and Uses of Carbolic Acid.

At the April meeting of the New York Medical Journal Association (*N. Y. Medical Gazette*, April 18), E. R. Squibb, M.D., made some remarks on the "so-called carbolic acid," from which we take the following:

"The carbolic acid was originally discovered many years ago by Runge, as a product of coal-tar distillation. It was further investigated by Laurent. Runge gave it the name of carbolic acid, while Laurent called it the hydrate of phenyl. Really it is not an acid but an alcohol: its peculiarity of combining with bases is not enough to constitute it an acid. The alcohols are now just as distinct a class as are acids or alkalis. An alcohol is a compound of carbon, hydrogen, and oxygen, formed on the type of water, in which one half of the hydrogen of the water is replaced by a radical; these radicals being organic compounds; *e. g.*, ethyl, methyl, etc. These radicals now run through chemistry as do the acids and alkalis. This compound then that we know as carbolic acid is really phenyl alcohol, formed on the radical phenyl, and is found in coal-tar.

"In the distilleries, the coal-tar is pumped warm into large retorts, and the volatile products distilled off. These products are collected in three groups:

"*a.* The 'light oils.' To these belong the benzine, or benzole, now employed in arts very extensively as a solvent, and as a substitute for alcohol, in processes where the latter would be too costly. In Europe it is used, in addition, for the manufacture of aniline dyes, which are as yet produced there at less expense. These light oils distil off at temperatures of about 70° to 180° C.

"*b.* The 'dead oils' or 'heavy oils.'

"*c.* The residue, which is the artificial asphalt used for roofing and similar purposes. The first and third groups are the valuable ones and the objects of the distillation. The second group, the 'dead oils,' are considered a waste, and are very cheap, and generally lie about the distillery yards in great quantity. It is from this second group that the tar alcohols are commonly obtained.

"If an alkali be mixed with the dead oil, a separation into two strata takes place, one of which is a compound of tar alcohols with the alkali. The alkali is then separated by treating with an acid, and the product is an impure carbolic acid.

"The purification of this consists in separating the phenylic alcohol from tar and oils, and from the cresylic. This is not necessary if a disinfectant or antizymotic is required, as the cresyl alcohol is probably better for these purposes than the pure phenyl alcohol. The cresylic differs from the phenylic in boiling at a higher point, being less soluble in water, and being as yet uncrystallizable. Any dehydrating substance, such as chloride of calcium, appears to change it into phenyl alcohol. Nearly, if not quite all the experiments that have been made with the carbolic acid, for disinfecting purposes on the large scale, have really been made with a mixture of the two. A mixture of them with some other alcohols is sold under the name of coal-tar creasote, which is, chemically, quite different from wood creasote, but medicinally, very similar.

"The carbolic acid when nearly pure, is a crystalline, moist solid, often of a pink or red color, having in the bottom of the bottle a certain quantity of liquid at ordinary temperature. This liquid, if the specimen be a good one, should not exceed one-fourth of the whole. From two to five per cent. of water will liquefy the whole of the crystals.

"The unseparated mixture of the two or more alcohols varies from a sherry wine color to almost black, and frequently is quite opaque, unless in a very thin layer. This mixture as a disinfectant, is as good as the pure alcohol, if not better. The test for the mixture is its solubility in water: a small quantity shaken up with two or three hundred parts of water, has the soluble tar alcohols dissolved out, and the proportion of residue left is the measure of its impurity. It is often adulterated with an alkali to increase its solubility.

"In ordering a saturated solution for use, it should be expressly stated whether the impure or the pure carbolic acid is desired, as the former is soluble to the amount of about two per cent., and the latter about six and a half per cent. The latter, if applied to the delicate skin of women or children, acts as a caustic irritant.

"A standard solution may be made by dissolving two pints of the impure acid in a barrel (forty gallons) of water. This is about the strength of the preparations of the acid sold as disinfectants, and quite as effectual, at far less cost. The impure mixture contains from seventy to ninety per cent. of the alcohols. For internal use, the crystallized acid is preferred as being more elegant, though as a remedy for vomiting and sarcinæ ventriculi, it is not so effectual as when the mixture of the group of alcohols is given. Mr. William Crookes, in his report to Parliament on the cattle plague, expresses the belief that cresyl alcohol is more powerful as an antizymotic than the phenyl alcohol, and Dr. Angus Smith arrives at the same conclusion.

"The carbolic acid was first brought to the notice of the profession as a therapeutic agent by Mr. F. Grace Calvert, of Manchester. He first took the matter up in a business way and rendered the acid obtainable.

"The prominent characteristic of the group is that it is deadly poison to the lower orders of animal and vegetable life. No cryptogams can live near it. The following experiment illustrates its peculiar character and indicates its uses: A large bottle, containing a little syrup, was allowed to become well covered with a growth of mould. A narrow slip of paper, the end of which was moistened with a solution of the impure carbolic acid, or coal-tar creasote, was suspended in the air space of the bottle above the cryptogams, and solutions of varying strength were used on the end of the paper. Until a proportion of one part in eight hundred was reached no marked effect on the mould was noticed, but in the proportion of one part in five hundred of water the whole growth was arrested in a single night, probably by less than a single drop of the solution suspended above it, and both the plants and spores were so killed that the moulding did not recommence. The same effect is produced upon animalcula and fish in water.

"This points to its use in all forms of parasitic skin disease. In the cryptogamous forms of pityriasis and psoriasis, tinea favosa, and also in scabies, it is found useful. Dr. Gray, of the State Lunatic Asylum, writes he has used it largely, and esteems it highly. He uses a solution of about the standard strength, and remarks that if it had no other use it would be invaluable in destroying vermin. For this purpose he uses it in the form of baths containing a small amount of the standard solution.

"It also is useful in cleaning away the tartar which gathers on the teeth, and which is due to animalcula.

"It has the power, too, of arresting all forms of cryptogamous fermentations. There are two kinds of fermentation, the one purely chemical and the other cryp-

togamous; an example of the latter is found in the action of yeast; of the former, the change of starch into dextrine. That form of cryptogamous fermentation known as yeasty vomiting is speedily arrested by the carbolic acid, which destroys the *sarcinæ ventriculi*. It is also fatal to animal life of as high a grade as the *ascarides* (*oxyures vermiculares*). For their destruction a weak solution can be injected into the rectum. In some instances, however, the remedy will fail.

"Some of the applications of carbolic acid are really but revivals of old methods of practice; thus creasote has a very deservedly high reputation as an application to burns, and as carbolic acid is medicinally at least identical with creasote, it is but changing the name of the agent.

"In my own person I have often experienced its benefits, and once tried the following experiment: Accidentally scalded by a jet of steam, a solution of carbolic acid, which is kept constantly at hand for such purposes, was at once applied on a piece of lint, before the pain became severe. In two or three minutes the pain was gone. In an hour the dressing was removed and the pain then returned. The dressing was renewed and the pain again ceased, but to return again when the dressing was removed. This anodyne effect has not been explained as yet, and does not appertain to its peculiar character as an antizymotic. A boy employed in my factory broke a bottle of compound spirits of ether, saturating the front of his pantaloons; this then took fire from a lamp which he was using, and he was quite severely burned over the lower part of the abdomen, the genitals, and the upper part of the thighs. In my absence he was taken to his home and dressed with cotton and oil. In a few hours I obtained permission of his medical attendant to apply the carbolic acid, which was attended with speedy relief of his pain, and he had a quick recovery. This application of the carbolic acid is one of its most valuable uses.

"Again the carbolic acid arrests the process of suppuration, which is, perhaps, a form of fermentation; but its *modus operandi* we are ignorant of. Sulphurous acid acts by deoxidation. Carbolic acid acts by catalysis apparently, which is only another way of expressing ignorance.

"It will not always arrest suppuration, but generally does so, particularly if it be chronic. Thus, in chronic cystitis, which continues, as it were from habit, after all inflammation has ceased, the secretion of pus will frequently be arrested by the use of injections of a solution of carbolic acid. The particular indication cannot always be pointed out, but it succeeds in some cases. In using the injections in this disease, it is better to begin with one-quarter of the strength of the saturated solution of the impure or one-twelfth of the pure acid; but, as no rule can be definitely laid down, the strength may have to be considerably increased, and the full strength should be used before this plan of treatment is abandoned. There may be some pain experienced after the use of a weak injection; this pain is, generally, only momentary, and is not increased by increasing the strength of the injection within reasonable limits. Its use as an injection in gonorrhœa often arrests the discharge, sometimes with wonderful quickness. Dr. Hutchison has employed it in a number of cases, but has not yet collected data enough to draw any very positive conclusions. If, as Dr. Salisbury maintains, there is a specific form of plant-growth producing each form of venereal disease, we should expect carbolic acid to be very effectual. It was formerly used as a local application to syphilitic ulcers, and internally for gonorrhœa; but the use referred to above, of

injections, is of recent introduction. How it would act in deeper-seated inflammation of the urethra I do not know.

"As a local application to aphthæ, and to the exudation of diphtheria, it has been much vaunted, and is very likely of value.

"The Egyptian process of embalming bodies by burning spices, I think, owed its efficacy to the creasote produced in this combustion. Some French writer states that a single gramme of carbolic acid is sufficient to preserve a human body, but he does not state for how long a time. The preservative power of carbolic acid is rather antiseptic than disinfectant; that is, it prevents the formation rather than changes the nature of putrid gases. The advantages of carbolic acid in surgery for cleansing dressings, sponges, bedding, floors, etc., is very great; and the cost need be but slight, since the impurity of the coal-tar creasote used is a matter of no consequence, the alcohols being alone soluble. A convenient way of keeping it for hospital use is as follows: Take a barrel to which a spigot is fitted; fill it half full of water, warm by preference; put into this two pints of the impure acid, and shake the mixture thoroughly; then fill the barrel with water, and set it up on its end; some of the impurities will rise to the top and some settle to the bottom. The liquid can be drawn off as required and diluted for use; a teacupful of it in a half gallon of water is sufficiently strong for scrubbing floors, etc. Bedding can be thoroughly disinfected by simple immersion in it."

On the above subject, we take a few remarks from a lecture by Dr. Crace Calvert, published in the *Journal of the Society of Arts, France*. The drawback to the use of carbolic acid, has been its tarry and sulphurous odor. Dr. Calvert has discovered a process by which the acid is deprived of all disagreeable odor and tarry flavor. It is distinguished from that of Laurent, in being soluble in twenty parts of water, whereas the latter requires thirty-three. The antiseptic properties of carbolic acid are so powerful, that even $\frac{1}{3000}$ th will prevent the fermentation or putrefaction for months, of blood, urine, paste, fæces, etc.; in fact, its vapor alone is sufficient to preserve meat in confined places for weeks; and $\frac{1}{1000}$ th has been found sufficient to keep sewage sweet. Among the articles to which this acid has given rise, Dr. Calvert mentions *picric acid*, which is produced by the action of nitric acid, forming, with the carbolic, a trinitrophenic acid. Aside from its value in the arts, picric acid is an efficacious remedy in intermittent fevers. Persons affected with such types of fever, upon whom quinine has lost all its beneficial effects, derive wonderful benefits from the use of this acid and picroates, as Dr. Ashland has proved at the Military Hospital at Dunkinfield. Its cheapness and the fact that it is not dangerous, and is borne well by the stomach, adds to its value.

Dr. HOLMES COOTE (*British Medical Journal*, April 25th), speaks in high terms of the use of pure carbolic acid in primary syphilitic sores; reporting its successful use in twelve cases of soft chancre, effecting a cure in from ten to fourteen days.

The Boston correspondent, "G.," of the *Medical and Surgical Reporter* (February 15th), gives the following formula, used successfully as a lotion in diphtheria, putrid sore throat, sloughing, and phagedenic ulcers.

R. Acidi Carbolici,	. . . . .	gtt. xxv.
" Acetici,	. . . . .	℥ss.
Glycerine,	. . . . .	℥ij.
Aque destil.,	. . . . .	℥vj. M.

History of the Medical Use of Bromide of Potassium.

We take the following statements from a paper carefully prepared by A. M. FAUNTLEROY, M.D., of Staunton, Va., for the *Richmond Medical Journal*, January, 1868.

Sir Charles Locock first administered the bromide of potassium, with reference to its sedative action on the cerebro-spinal system, in 1852. He also used it in hysterical epilepsy with erotic symptoms. M. Thielman used it in 1854 in satyriasis, spermatorrhœa, and nymphomania. Dr. Pfeiffer in 1859 made use of it in neuralgia of the neck of the bladder. To Dr. Garrod we are indebted for observations on its hypnotic effect in large doses. Dr. E. Brown Séquard generalized the use of this remedy in nervous affections connected with congestion of the brain. To him should be accredited the introduction of this salt into the practice of this continent.

The bromide of potassium has a saline taste, somewhat agreeable. It is necessary to go beyond 45 grains in order to produce the local phenomena, of smarting in the back of the throat; a redness of the roof of the mouth and tonsils; œdema of the uvula and mucous membrane. Forty-five-grain doses continued for weeks are very apt to redden the tip of the tongue, and occasion a bristling of its papillæ, with a glossy yellow coating of epithelium at its base. The tongue may become enlarged to double its volume. It is not rare to feel pain in the gums and decayed teeth. The reflex sensibility of the base of the tongue and epiglottis is much if not altogether lessened if we exceed 45 grains. Epigastric heat has followed the ingestion of $\mathfrak{z}\text{ij}$ to $\mathfrak{z}\text{iiss}$, which after a little while is followed by salivation, salty or sweet, and occasionally fetid; occasionally there are signs of intoxication, with an injection of the conjunctiva, chemosis, and dilatation of the pupils. The stomach will generally tolerate large doses of the bromide, but the above are inordinately large.

The nervous centres are affected by doses (of $\mathfrak{z}\text{iiss}$) with signs of depression; ideas embarrassed; incertitude of memory and reflection; general lethargy, words drawling, inability to write; hebetude of visage, drowsiness in the day after meal; tactile sensibility preserved.

Respiratory passages evince almost uniformly hoarseness and roughness of voice, dry cough, laryngeal constriction, aphonia, subcrepitant râles.

Circulating system: pulse is rarely accelerated or unsteady, usually diminished in frequency.

Muscular system is variously affected, lethargy, gait irregular, stumbling, sometimes emaciation.

The skin, in small doses persistently given, will sometimes manifest the eruptions of acne, ecthyma, and erythema.

Digestive organs: appetite generally quite good, constipation, occasionally diarrhœa.

Genito-urinary organs, inertia of the genital organs marked, very rare exceptions of erections, etc.

Urine is increased after persistent use of the salt; micturition may become painful. Elimination by the kidney is not very active. A patient who, within a few days, had taken 135 grains, in 4875 grains of urine furnished only $1\frac{1}{2}$ grains of the salt in cubical crystals. Another was given at first 45 grains, then 150 grains;

upon an analysis in the first instance, in 15,000 grains of urine, not quite one-seventh grain was found; in the second, in 6000 grains of urine, nearly 6 grains were collected. To a third patient three drachms were administered, and an analysis of 12,750 grains of urine furnished $3\frac{1}{2}$ grains of the bromide of potassium. Although the elimination is certain, we discover that it is far from bearing constant ratio with the amount of the salt exhibited. The progression of the phenomena preserved generally the following order: acne, bromuret odor of the breath (grains, 30-45); hypnotism (45-60 grains); emaciation (95 grains); intellectual disturbance ($3\frac{1}{2}$).

These deductions are drawn from seven cases, published by M. Voisin—*Medicin des Alienées à la Salpêtrière*. These seven cases were subjected to treatment, or experiment, for the average time of three months and four days; with the average dose, daily exhibited, of a very small fraction above one drachm.

The distinctive action of this medicine is to produce such an impression upon the nervous system as to lessen its receptivity, and an indisposition to molecular change follows as a corollary. It has a calmative action on the vascular system, lessens the afflux of blood to the nerve-centres, and thus secures that physiological repose so essential to growth and repair. Among all the so-called sedatives this remedy appears especially conservative throughout. In the treatment of epilepsy, the list is long of eminent men of different countries, who testify to its successful use. Locock, Wilks, Chambers, Williams, of England; MM. Gubler, Basin, Besnier, Voisin, of France; in Italy, McNamies, *Medecin en Chef du Grand Hôpital, Venice*; in America, Séquard, Flint, Barker, J. Crichton Brown, and many others.

In *puerperal convulsions*, its employment has been limited, but the published experience is very encouraging. Dr. Charles E. Shoyer, of Leavenworth, Kansas, has recorded a case where he replaced chloroform inhalations by the exhibition of 15-grain doses hourly of bromide of potassium. From the period of its administration to the close of the labor the patient was exempt from convulsions. Dr. Jared B. Wood, of Croton Falls, N. Y., reports an equally successful instance; the bromide being employed on the first day in 15-grain doses every two hours, and in like doses and intervals combined with one grain bromide of ammon. on the second. In delirium tremens it has been employed with very favorable results. It has been relied on confidently in this disease in Bellevue Hospital, N. Y., and the Baltimore Infirmary, in doses of twenty-five to thirty grains every two or three hours.

In psychological disorders the bromide has afforded most satisfactory evidences remedially. Dr. Begbie has controlled, through its influence, violent maniacal subjects, in which the bromide of potassium was exhibited in 30-grain doses every three hours.

Dr. S. W. D. Williams, of England, employed this remedy in the treatment of 37 cases of insanity, where all were benefited—General Lunatic Asylum, England.

The results arrived at by Dr. Salerio, Physician of the Asylum of St. Servolo, Venice, were quite encouraging.

Dr. Pliny Earle, Superintendent Lunatic Hospital at Northampton, Mass., has tested its meliorative influence in chronic cases of mania.

Dr. Wm. L. Peck, of the Central Lunatic Asylum, Columbus, Ohio, has found the bromide of potassium a valuable remedy; uniformly serviceable in a class of

ing of Bromide of Potassium, says: I have found this preparation as surely sedative in its effects upon the uterine system as ergot is a stimulant, and have invariably employed it in dysmenorrhœa, menorrhagia, neuralgia of the uterus, and ulceration of its neck and mouth. Cases of dysmenorrhœa yield very rapidly and readily to this remedy; also the neuralgic complications of ulceration, after opium and other anodynes have failed.

Cannabis Indica in Mania-a-Potu.

Dr. BEDDOE, Physician to the Bristol Royal Infirmary (*Med. and Surg. Reporter*), advises in the treatment of mania-a-potu the use of cannabis indica. He usually begins with a grain of the extract, or twenty minims of the tinct., repeated at intervals of six hours and increased to three or four grains if necessary. In one case Dr. B. gave as high as six grains at a dose. Along with the remedy he is accustomed to give as much soup, milk, and other digestible food as the stomach will bear; rarely alcoholic stimulants.

Liquor Ferri Persulphatis in Intermittent.

Dr. G. H. LENOIR (*Southern Journal of Medical Science*), has used the above article successfully, in doses of from gtt. viij. to gtt. xv, every four or six hours, in cases of intermittents in which quinine had not only failed to cure the disease, but also produced unpleasant effects.

Internal Use of Chloroform.

Dr. MANN, of Roxbury, Mass., in a paper read at the Norfolk District Medical Society, January 8th, stated that he was in the habit of using chloroform internally in cases of severe colic. It relieved the pain of lead colic better than anything else he had tried. In cholera morbus and in cholera, it was very efficient in controlling vomiting and cramps. He had seen reaction take place from the collapse of cholera, after the exhibition of two or three doses. He had never exceeded half a drachm for a dose.

Gelseminum.

Dr. D. L. PHARES, Newtonia, Mississippi, in the Atlanta, Georgia, *Medical and Surgical Journal*, February, speaks in high terms of the value of gelseminum in the various forms of malarial disease. He has used this medicine some thousands of times, and is fully convinced that it is one of the most valuable agents of the *Materia Medica*. A gentleman who had been residing in the low lands of Louisiana, after passing through a neighborhood where cholera was prevailing, was attacked with this disease in its most violent form. After ordinary remedies, with opiates, had failed, he was given half a teaspoonful tinct. gelsem. with half a grain of morphia. This being rejected, as soon as his stomach was emptied a second dose was administered, tinct. gelseminum, fʒj; morphia, gr. j; which completely checked the discharges and brought the case under control.

Dr. THEODORE C. MILLER (*Jour. Materia Med.*, New York), recommends, in the early stage of gonorrhœa, the following—

R. Fluid Ext. Gelsem.,	f ʒss.
Aque Camph.,	ʒij. M.

A teaspoonful every two hours.

H. O. WALKER, M.D. (*Detroit Rev. of Medicine & Pharmacy*, March), reports the views of Professor ARMOR, Medical Department, University of Michigan, on the value of gelseminum, as follows:

"It yields its virtues to water, and readily to diluted alcohol.

"Professor Armor stated that correspondents, journalists, and modern writers on therapeutics are not precisely agreed as to the proper classification of this remedy; nor are they agreed as to its therapeutic uses.

"It is a sedative rather in the sense in which veratrum is a sedative; it affects the nerves of organic rather than animal life; and its effects are more strongly produced and not so strongly marked as veratrum.

"By some it is denied that it has narcotic properties; while others speak in very positive terms of its power in controlling irritation of the cerebro-spinal centres.

"To this opinion he himself inclined.

"From careful examination of what has been written regarding this article, from the testimony he has gathered from respectable practitioners, and from considerable experience in its use, he is induced to regard it as a *nervous* rather than a direct cardiac sedative. Also, that it allays morbid irritability and initiative actions generally; in large and repeated doses producing vertigo, impaired vision, and a decided abatement in the force and frequency of the pulse.

"Hence its adaptation to the treatment of febrile affections in which irritation plays so important a part. In our autumnal fevers, such as prevail in the West and South, it is a valuable addition to quinine. Especially in sthenic, irritable, and inflammatory states of the system, it adds to the calming sedative action of the anti-periodic. And in general inflammatory affections he is inclined to think it often a valuable addition to veratrum viride; it also is a sedative to the *nervous system*, while veratrum is a more direct sedative to the action of the heart and arteries—their joint action covering a wider range of sedation than either alone.

"In inflammatory and irritable conditions in infantile life, he is partial to the use of gelseminum combined with hyoscyamus; a drop or two of fl. ext. hyoscyami may be combined with $\frac{1}{4}$ to 1 drop of tinct. gelseminum."

Phosphuret of Zinc as a Substitute for Phosphorus.

M. VIGIER, a pharmacist of Paris, has a communication in the *Bulletin Général de Thérapeutique*, for March 30th, 1868, in which he proposes the phosphuret of zinc as a substitute for phosphorus.

He obtained it by subjecting boiling zinc to the vapor of phosphorus in an atmosphere of dry hydrogen gas. It is a gray, crystalline body, not liable to decomposition in the air, whether moist or dry, but readily attacked by acids, and even by lactic acid, giving off phosphuretted hydrogen; and exerting on the economy an action precisely the same as that of phosphorus itself dissolved in oil.

The author has tried many other phosphurets, but has found them all either so stable as to resist the action of the acids in the stomach (as, for example, the phosphuret of iron), or so readily decomposed as not to be stable in the atmosphere.

The formula of the salt is PhZn^3 . In the stomach an inoffensive salt of zinc is formed, and PhH^3 set free, which gas, M. Vigier has found in the intestines in abundance, in his experiments on animals.

When the phosphuret of zinc is placed under the skin, its specific action does not take place for days, evidently not until a certain stage of suppuration.

As a medicinal or toxicological agent, M. Vigier found that it had the power of half the phosphorus it contained. He took, himself, a grain and a half at one time containing one-fourth that amount of phosphorus, and felt only a sensation of weight at the stomach, which lasted some hours; but, when he repeated the dose on the following day, it caused vomiting. He advises it to be given in doses of less than half this amount.

Eucalyptus Globulus in Malarial Fever.

J. G. BEER, in a communication to the *Wiener Medicinische Wochenschrift* for April 4th, 1868, states that in Portugal and Spain the leaves of the above-named plant are employed and considered as the best treatment for swamp fevers. It is a native of Van Diemensland, but, in the southern part of Europe, it will grow in the open air without any protection. In the climate of Vienna, however, it requires to be guarded from the winter's cold.

The author has a quantity of the seed, and offers to send them to any scientific man who desires to experiment with the plant. The seed should be sown in sandy soil. The plant grows very rapidly and, the second year, will have rounded stalks; those of the first year being four-sided.

It is the leaves of the second and subsequent year's growth which contain the medicinal properties.

The dose is six leaves boiled in a pint of water, and the whole of this infusion given in the course of the day. The same is to be done on the second and third days, by which time a cure will have been effected.

Santonin.

In the *Bulletin Général de Thérapeutique*, for April 30th, 1868, there is a résumé of experiments made by Professor FRANCESCHI GIOVANNI on santonin, and his conclusions on the cause of the yellow color which objects present to the eyes of some of those who have taken it.

It is known that santonin is insoluble in water, but soluble in alcohol. It becomes yellow when exposed to the light, and is therefore usually preserved in opaque bottles. It causes the urine, when exposed to the light, after having been passed, to become yellowish-green, and often causes hæmaturia. Professor Giovanni gives an instance of a child of six or seven years of age, who, after having taken six grains of santonin at a dose, lost so much blood with the urine that he died in consequence of it. Similar cases have also been reported by Dr. Ambroise.

When santonin has been taken, after having already turned yellow in consequence of exposure to the light, the urine is not affected in color, and objects do not assume the yellow tinge to the patient. The blood, also, which, when exposed to the air, after *unaltered* santonin has been taken, becomes yellowish, undergoes no change in this instance. From this Professor Giovanni concludes that it is in the eye, itself, that the blood changes color, in consequence of exposure to the light, as it passes along; and that when any of the santonin penetrates into the aqueous humor, it is in this medium that, by its yellowish hue, the yellow and greenish-yellow spots, seen by the patient, are produced.

As there is some danger of producing serious derangement of vision by the permanence of this dye, the author advises that either *santonin* should never be given unless it has already changed color, or else that it should be given only at night, in which case the visual powers will not be endangered.

III. ANÆSTHESIA.

Chloroform.

DAINGEROUS EFFECTS OF CHLOROFORM.

At a meeting of the Chicago Medical Society (*Chicago Medical Journal*, December, 1867), Dr. HOLMES reported the following case:

Chloroform was administered at the clinic of the Eye and Ear Infirmary, for the purpose of iridectomy, to a patient, æt. sixty-eight, formerly addicted to the excessive use of alcohol, but now apparently in good health. The chloroform was inhaled from a napkin, folded square, and held in the form of an arch, two inches from the face. In about four minutes there were very violent tonic spasms of the legs and arms: at the end of another minute the muscles became suddenly relaxed, the breathing ceased, and the pulse became very feeble. The face was covered with perspiration, the lips pallid, and the features pinched—giving the appearance of approaching death. On raising the feet and hips, drawing out the tongue, and pressing upon the chest, the patient began to breathe. In two or three minutes the breathing became normal, and the patient was restored to a horizontal position, when, at once, without the use of more chloroform, the breathing ceased. Froth stood about the lips, unmoved by the breath; the pulse at wrist became almost inappreciable. After ten minutes, the patient being placed in the position above-described, and the chest alternately relaxed and compressed, the heart's action, which had not become entirely inaudible, became stronger, and the respiration and pulse soon became normal. The operation was then performed without further incident. In twenty minutes the patient walked up two flights of stairs.

Dr. H. stated that he had recently observed as alarming, though not so protracted symptoms, while administering sulph. ether to a patient advanced in years. The position is important in these cases. The patient should be placed head downward, upon a very steep, inclined plane. Whatever the conditions may be on which the danger depends, in some cases there seems to be an insufficient supply of blood to the brain.

At the same meeting, Professor Andrews reports a case in which alarming symptoms followed the inhalation of

TETRACHLORIDE OF CARBON.

The patient, a young man, somewhat reduced by disease and confinement, after breathing this anæsthetic for some minutes, complained of violent, griping pain in the abdomen. The pulse increased very rapidly in frequency, till it could scarcely be counted; respiration ceased; the head was drawn back, and the pupils dilated. About three drachms had been inhaled. The usual efforts to arouse were successful, and in a few minutes he was out of danger.

DEATH FROM CHLOROFORM.

RICHARD O. COWLING, M.D., Assistant to the Professor of Surgery, University of Louisville, Kentucky, reports (*Medical and Surgical Reporter*, February 8th) the following case:

"Eliza O'Bryan, aged twelve years, was admitted into the Surgical Ward of the Louisville City Hospital, on September 16th, 1867. She had, at the time, an ulcer on the inner ankle of the right leg (caused, as she thought, by wearing a tight shoe), and which rendered the use of crutches necessary for her to get about. The ulcer refused to yield to treatment, and in the course of time, the existence of dead bone in the situation was suspected."

On January 3d, she was brought into the amphitheatre, with her own consent, for operation. Owing to the difficulty of getting her under the influence of the anæsthetic, and of exploring the wound, she was kept on the table about thirty-five minutes, and some two ounces of chloroform were consumed.

The case was deferred, in order to use a sponge-tent. Dr. George W. Bayless, Professor of Surgery, was the surgeon in charge.

"At 2½ P.M., January 7th, the patient was summoned for the clinique, and came with alacrity, refusing assistance, and using her crutches. She placed herself, without persuasion, on the operating-table, and the inhalation of chloroform began at 2.35 P.M. It was given on this occasion by the writer, one of the residents having administered it on the previous day. None of the usual precautions were omitted. The chloroform was of a different brand from that used for the first inhalation, but it bore the name of one of the first druggists of Louisville, and on a subsequent analysis, Professor T. E. Jenkins pronounced it to be pure. There was no ammonia or whiskey at hand, but these were sent for before beginning with the inhalation. The patient was placed in a recumbent position, with a single small pillow beneath her head. All constriction was removed from her throat and chest. There was free ventilation in the amphitheatre. The chloroform was inhaled from a folded towel, which was not brought nearer than one inch to her face. A quantity sufficient to moisten about two inches square, on the towel, was poured from the bottle at one time. Her pulse was intrusted to one of the residents, Dr. A. J. Keightly, the writer confining his attention to the respiration and expression of the face. In about three or four minutes, seeming to be asleep, the towel was withdrawn. Testing the degree of narcotism, by touching the eye, she was reported to the Professor as *ready*. Her breathing had been, from the first, tranquil. She had refused to take deep inspirations. After withdrawing the towel, her pulse was counted by Dr. K., and found to be one hundred and four. It was felt by the writer, and found strong and regular. Professor Bayless began the exploration, and, after entering the probe, made an incision of about half an inch, to facilitate the entrance of his finger. The patient was roused somewhat into consciousness, and complained of the operation hurting her, calling the doctors by name. The towel was again held to her face, and so from time to time, as she seemed to come from under the influence of the chloroform. After an interval of some minutes, the writer was again requested to examine her pulse. It was strong and regular still, though evidently fallen off ten or fifteen beats. Still later it was reported unnatural, and on examining it, he found it dicrotic and weaker. The towel had been withdrawn then from her face at least three minutes, during which time she had spoken, saying, 'You hurt my foot, and I will tell my father.' It was the writer's intention

to reapply the towel after she had spoken, when his attention was called to the pulse. Turning immediately then to her face, it was found deadly pale; there was twitching of the muscles about the mouth, the eyes rolled upward, became fixed, and the pupils were widely dilated. A deep, stertorous breath was drawn, and the patient started forward. These phenomena followed each other so rapidly that their sequence could not be remembered. Professor Bayless had proceeded so far with the operation as to put one jaw of the bone-forceps into the wound. The breathing immediately attracted his attention, and thinking, as he has said, that 'she had enough chloroform,' turned to order it away, when he was struck with the appearance of her face. Catching the wrist next to him, he found the pulse gone. Her breathing still continued—stertorous, and then sighing. Her tongue was seized with the clawed-forceps, and dragged out of her mouth. Ammonia was held to her nostrils, whiskey was poured down her throat, and water was dashed on her face and chest. Immediately after the failure of the pulse, the ear was placed to the chest, but no sound of the heart's action could be detected. Marshall Hall's method was used to continue the respirations, and was kept up for some moments after these had ceased. It is to be noted, however, that the breathing continued after the failure of the heart, then perhaps ten respirations were made before Marshall Hall's method was used, and as many more afterward. She died at three o'clock, twenty-five minutes after the inhalation began. About an ounce of chloroform had been consumed.

"Post-mortem by L. D. Kastenbine, M.D., Adjunct Professor of Chemistry, five hours after death. Body had no post-mortem saggulations.

"The brain and its membranes healthy and free from congestion. Serum in all the ventricles, about one ounce.

"Lungs were in a state of venous congestion; right more so than left. The former, on dividing its substance with scalpel, poured forth black blood in considerable quantity. Adiposity of pericardium. Heart healthy in texture, with fluid blood occupying both sides, with a few clots in right—about half an ounce in left, and treble that amount in right ventricle. The latter ventricle was soft and flaccid, the former had its walls rigidly contracted. Valves healthy. Two fibrinous clots were also found, one occupying the right auriculo-ventricular opening, the other in the left ventricle, extending from mitral valve to semilunar or aortic valve. The extent of disease showed that surgical interference was justifiable. The mode of death was by syncope."

Protoxide of Nitrogen as an Anæsthetic.

We take the following from the *Continental Gazette*, an American journal recently started in Paris.

"On the 22d of December, Dr. J. Marion Sims performed a surgical operation of unusual interest in which he made use of the new anæsthetic agent, nitrous-oxide gas. The operation consisted in the removal of the entire breast for cancer. The patient was a lady about sixty years of age, rather stout, and slightly of the lymphatic temperament. In about two minutes from the time she commenced breathing the gas, she was in a profound anæsthetic sleep. She was kept insensible for sixteen consecutive minutes, till the operation was finished and the dressing nearly completed. In less than one minute from the time she ceased to breathe the gas she returned to perfect consciousness, having, as she stated, experienced no pain

from the operation. There was no nausea, sickness, or vomiting, as is often the case in the use of chloroform.

"There was one remarkable feature connected with the use of the gas. After the patient was first made insensible, she was allowed to breathe some air with the gas, and was thus returned to semi-consciousness, and continued in this condition during the entire operation. She declared after the operation, that, while inhaling the gas, she could see Dr. Colton and Dr. Evans (who administered it), but felt no pain, though she experienced a kind of 'pushing sensation.'

"There were present to witness the operation Baron Larrey, Surgeon-in-Chief of the Army; Sir Joseph Olliffe, Physician to the British Embassy; Dr. Pratt, Dr. Vanzandt, Dr. Pope, of St. Louis, Dr. Stearns, of Boston, U. S., and some others of note, all of whom united with Dr. Sims in expressions of surprise and delight at the operation of this new anæsthetic agent. This was, perhaps, one of the operations where the patient was kept insensible for the greatest length of time with the gas, and it certainly proved eminently successful.

"The above experiment goes far to establish the fact that the nitrous oxide gas, which Drs. Evans and Colton have done so much to develop, is harmless in its operation, and while it destroys pain, allows the patient to remain in a semi-conscious state, with but a slight disturbance of the natural and normal vital forces. This is a great point gained over any anæsthetic now in use."

HENRY J. BIGELOW, M.D., Professor of Surgery, Harvard Medical School (*Boston Medical and Surgical Journal*, February 13), reports a case of excision of the breast for non-malignant disease, twenty years ago, under the influence of the nitrous oxide. The patient, a married lady, æt. forty-eight, had suffered somewhat in general health. The gas was administered through a double-valved mouth-piece, so that a constant fresh supply was insured. After several inspirations the patient's lips, and the most vascular part of the tumor, began to assume a purple color. She remained quiet, however, and in a short time was insensible. She made no outcry or other sign, until some time during the ligation of the arteries, when she expressed a little uneasiness. She recovered consciousness soon after, without unpleasant symptoms. About sixty quarts of gas were administered. Anæsthesia by nitrous oxide produced lividity of the surface and muscular rigidity; both doubtless due to asphyxia. The pure gas will not support life; while a patient may be so narcotized with ether vapor, that fresh air can be let into the lungs without restoring him to consciousness. The admission of a little air with the nit. oxide is apt to arouse the patient so that it is comparatively difficult to maintain a protracted and equable anæsthesia. Dr. Bigelow says a perfect anæsthetic should be:

1. Always effectual.
2. Wholly safe.
3. So far under control that a greater or less degree can be produced at will.
4. It should itself support animal life, or be capable of insuring a safe insensibility while the patient is breathing atmospheric air.
5. It shall produce its effect neither by asphyxia, intoxication, nor narcotism.
6. It should be of small bulk.
7. It should possess but little or no odor.

Of the numerous agents known to science, in this connection, none have supplied the demands as well as chloroform and ether.

The *British Medical Journal*, of April 4th, gives an account of the demon-

strations of the use of nitrous oxide gas, in dental operations by Dr. Thomas W. Evans, of Paris, at the London Dental Hospital, Soho Square. The record of cases shows that in a considerable number unconsciousness was induced in less than three-quarters of a minute; that consciousness returned almost instantly after the operation, without headache, sickness, prostration, or other unpleasant results. In many of these cases the whole process, inhalation, operation, and recovery, occupied less than two minutes.

The credit of first applying this agent extensively is given to Dr. Colton, of America. Dr. Evans states that as many as twenty-five thousand dental operations performed under the influence of this gas, have been reported without any serious misadventure. It is administered by Dr. Evans, pure, entirely unmixed with atmospheric air. The gas is prepared from ordinary coal-gas, by a process and apparatus invented by Dr. Colton, modified by Dr. Evans; stored in bags furnished with tubes having inspiratory and expiratory valves. If air be admitted in the administration, the results are unsatisfactory, the sensations are unpleasant, and excitement instead of unconsciousness may be produced. The ordinary quantity used is about two gallons. The signs of unconsciousness are the same as with chloroform. There is one sign, however, which would be much dreaded in chloroform anaesthesia,—a marked blueness of the skin. This, says the editor, must indicate a condition of the heart and lungs which could hardly be maintained or induced without risk.

The London *Medical Times and Gazette*, April 18th, editorial, in appreciating the value of nitrous oxide as deduced from recent experiments, says: To prepare the gas for inhalation great care must be taken to preserve its purity. It may be contaminated by the presence of other oxygen compounds of nitrogen, particularly nitric oxide, or by chlorine compounds, resulting from irregularities of temperature, or impurities in the salt (nitrate of ammonia). The *Times* indorsing the remarks of Dr. Richardson at a recent meeting of the London Medical Society, says, "When protoxide of nitrogen is inhaled instead of air, there are no longer two gases of very different densities on either side of the pulmonary capillaries, the one in the air-cells of the lung, the other in the blood. Consequently seeing that nitrous oxide and carbonic acid, having the same density and the same diffusibility, will not change places, carbonic acid will become accumulated in the system to an enormous extent. The small amount of protoxide of nitrogen absorbed having chemical properties almost identical with those of oxygen, will, we may suppose—although on this point opinions are divided—hasten the production of carbonic acid, and, consequently its accumulation. No wonder then, that anaesthesia, or rather apnoea, rapidly follows. It cannot be too widely understood that protoxide of nitrogen is not an *anæsthetic* in the true sense of the word, but an *asphyxiating agent*; that its effects are identical with those of poisoning by carbonic acid gas."

The physiological action of the nitrous oxide is discussed by W. Marcet, M.D., F.R.S., in the *British Medical Journal* of May 9th. Dr. Marcet quotes a remark of Prof. Wanklyn in reply to Dr. Richardson to this purport. The *specific gravity* of the two gases (nitrous oxide and carbonic acid) being equal, the results of their being brought together, separated only by a porous membrane, is, that exactly as much nitrous oxide would pass through in one direction as carbonic acid in the other. In the phenomenon of respiration, says Dr. Marcet, we have not to deal

with the separation of two gases by means of a porous septum, but through the agency of a moist membrane, its pores, if any exist, being filled up with fluid; and moreover the diffusion takes place between a gas, and a gas dissolved in a fluid moistening a membrane, and not between two gases in a gaseous form. A moist bladder two-thirds filled with air swells when suspended in carbonic acid, and finally bursts, but a small part of the air passes out. A bladder containing air also expands in water having carbonic acid in solution, but not so quickly. On the other hand a perfectly dry bladder does not distend in carbonic acid. Prof. Graham has shown that the passage of gases through moist membranes is due to the solubility of the gases in the fluid with which the membrane is moistened.

If we now turn our attention to the physiological action of protoxide of nitrogen, from a consideration of the above remarks, its presence in the pulmonary vesicles cannot in any way be opposed to the elimination of carbonic acid from the blood circulating through the lungs; it will become dissolved by the moisture adhering to the air-vesicles, and carried by liquid diffusion into the blood. The solubility of nitrous oxide in water is much higher than that of oxygen; consequently it will find its way into the blood much more rapidly than oxygen would. Water at 68 deg. Fahr. (a temperature inferior to that of animal heat), for one volume of oxygen supplied to it in air, will absorb no less than thirty-seven volumes of oxygen supplied to it as nitrous oxide; this will give an idea of the relative degree of absorption of oxygen by a moist membrane, such as that of the lung, from air, and in the form of nitrous oxide. These considerations appear to me to show that the action of protoxide of nitrogen on the human body is due, first, to an increased supply of oxygen to the blood, causing the well-known exhilarating effects; and, later, when a larger quantity of the gas has been absorbed, anæsthesia is produced by the excessive formation of carbonic acid in the blood owing to a large supply of oxygen. When the gas is exhibited diluted with air to a certain point, the exhilarating effects do not pass off into insensibility, because the carbonic acid is eliminated as fast as it is formed; but, when given undiluted with air, its anæsthetic influence becomes quickly developed. The rapid disappearance of the blue stage, and return of sensibility, appears due to the fact that, according as the excess of carbonic acid in the blood is withdrawn from it by the respiration of pure air, the oxygen of the nitrous oxide absorbed becoming present in the blood in excess of the carbonic acid, causes an immediate renewal of the vital functions, allowing time for the absorption of oxygen from the air inspired. If this view should be correct, it would follow that nitrous oxide is a safe anæsthetic agent when required only for a short time, and even when administered for a protracted operation, care being taken to allow the occasional respiration of pure air, so as to get rid of the excess of carbonic acid formed, supposing, of course, that nitrous oxide is not possessed of any special anæsthetic property.

Tetrachloride of Carbon.

Prof. E. ANDREWS, of Chicago, has been trying this new anæsthetic in a surgical case. He narrates the result in the *Medical Examiner*, as follows:

Nothing remarkable occurred at first, but after the lapse of a few minutes, the assistant, whose duty it was to watch the pulse, observed that it increased suddenly in frequency, so that in a short time he was unable to count it. At the same time, the patient, who was not yet unconscious, complained of a violent pain, as of cramp,

in the vicinity of the heart, and after a moment more, the pulse and respiration both suddenly ceased. The patient's head was spasmodically drawn backward, the countenance looked pale and deathly, and the pupils of the eyes dilated until the iris could scarcely be seen. Artificial respiration was at once commenced, and strong aqua ammoniæ was rubbed in the nostrils, under which treatment, the patient revived again, although to all appearance almost dead. The anæsthesia was then completed by concentrated sulphuric ether, without further accident, and the carious bone excised in the usual manner. I do not think that there remained any prolonged unfavorable effect after the use of the tetrachloride, but the sudden advent of such urgent and dangerous symptoms made a strongly unfavorable impression on my mind, for the patient was much nearer death than I ever saw one go under ether. I certainly shall not venture on the use of the article again, unless very extensive experience by others demonstrates its safety.

It is proper to state that the patient was in a very exhausted and anæmic condition from the effects of disease, and was operated on as a last, desperate resort, having no other hope of life. He rallied from the operation pretty well, without showing any signs of injury from the tetrachloride, but died subsequently, from exhaustion.

Local Anæsthesia.

Dr. J. R. WEIST, an intelligent practitioner of Richmond, Indiana, in a communication to the *Western Journal of Medicine*, says that he is led to believe that the majority of practitioners do not fully appreciate the importance of annihilating pain during the performance of minor surgical operations by means of the ether spray. He says:

"It is just as cruel for the physician or surgeon to cause pain, when he can by any reasonable means avoid it, as it is for any one else to do so, and the medical man who seeks every means whereby suffering may be averted from his patients, will have not only the satisfaction that follows a good action, but the gratitude of his patients."

He has now followed Dr. Richardson's method for more than a year, and been well satisfied with it. He uses an apparatus of Dr. Richardson's made in London. With it, using the common ether of the shops, the mercury may, with very little labor, be made to fall from 70° to 0° in thirty seconds, to -6° in one minute, and the skin frozen in from one to two minutes, the apparatus, when in full operation, consuming from f3ij to f3j per minute, according to the size of the jet in use. Lately, he has used almost exclusively *rhigolene*, a petroleum naphtha, manufactured at the suggestion of Professor Henry J. Bigelow, of Boston. This is one of the most volatile liquids obtained by the distillation of petroleum, boiling at 70° . Its odor is, to most persons, much less disagreeable than that of ether, and somewhat resembles that of benzine. Using rhigolene instead of ether, the mercury may be made to fall to 0° in six seconds, and to -16° or -18° in half a minute, while the skin may be frozen in from ten to thirty seconds. This liquid, then, has the advantage over ether in this, that by it the desired anæsthesia may be much more rapidly induced, and made to extend to a greater depth below the surface, and that its odor is less disagreeable; besides, its cost is but little more than half that of ether. The only difficulty he has found with it has been that, owing to its extremely low boiling-point, it has required some care in keeping

during hot weather. He has kept it, however, in his office during the past summer, by placing the bottle containing it, tightly corked, in a vessel containing water. In using it, it is well to remember that it is highly inflammable, and that an explosion is reported to have taken place in consequence of direct sunlight being allowed to fall upon a bottle containing it.

Usually, the projection of the spray upon the skin causes but very slight discomfort, except just at the moment the skin becomes blanched—showing that it is frozen—when slight pricking pain is complained of. In one case, that of a professional friend, who was suffering from an abscess in the axilla, the application of the spray caused so much pain that it was discontinued, he declaring that it caused as great pain as did the knife without any preparation. Such an effect is probably rare, and owing to individual peculiarity.

The tissues, when frozen, are rather hard, and cut crisply, and when the spray is removed, they quickly, in most cases, regain life without pain. There is no sloughing, only a little redness, and sometimes a slight œdematous swelling and prickling pain, which remain for a short time. The rapidity by which the freezing process is accomplished, and the quick return to a normal state, is evidently the reason why sloughing does not follow this method of producing local anæsthesia by cold.

If the operation is to involve more than the skin, the part should be well frozen, that is, it should be white for a minute or more before the knife is used. The surgeon should cut slowly while the spray is kept going before the knife. If the incision is to penetrate the deeper structures, the skin and superficial fascia only should be divided by the first incision. By throwing the spray into the wound thus made, the anæsthetic effect will penetrate more deeply, when the knife may be again applied, and so on. By proceeding in this manner, the structures may be divided to any required depth without pain. When the operation is a lengthy one, it is well to apply cold water to the part, in order to delay slightly the recovery.

Dr. Weist recommends, that when the knife is about to be used, the attention of the patient should be directed from the operation, and, if the spray has been properly applied, he will seldom be conscious of the proceeding.

Local Etherization for Reducing Strangulated Hernia.

Among the applications of local anæsthesia is that of reducing strangulated hernia. Bouchardat in his Annual Abstract of Therapeutics for 1867, quotes from the *British Medical Journal* the following case:

"A man, aged 35, affected for two years with a left inguinal hernia, and having never worn a support, had suffered for 36 hours with a strangulation produced by a violent effort. The tumor was painful, and there were continuous eructations with vomiting. Mr. Wallace applied the taxis; and Mr. Barclay, in turn, renewed these efforts, but without success, although opium and calomel had been administered.

Before operating, Mr. Barclay suggested the use of Richardson's ether-spray instrument.

He directed the jet on the tumor, and at the expiration of forty seconds the skin became blanched, when the instrument was suspended. Upon reapplying the taxis the hernia was immediately reduced as if by magic.

GENERAL MEDICINE.

I. HISTORY OF MEDICINE.

Surgery and Hygiene in Ancient Rome.

FOR new light on these subjects we must look not so much to the well-known works of ancient writers as to the researches of antiquarians. These have recently added many valuable facts to our knowledge of the old Romans in these respects. Dr. WILLIAM NEWMAN, President of the Shropshire branch of the British Medical Association, in an address published in the *British Medical Journal* (Jan. '68), describes some of the instruments found in the buried cities of Southern Italy.

Uriconium, he remarks, has only furnished to the excavator a single lancet, some probes, and some ear-scoops, etc. In Pompeii, in the Via Consularis, the house of a surgeon has been disinterred, and forty surgical instruments there discovered. "In many the description of Celsus is realized; as, for instance, in the specillum or probe, which is concave on one side and flat on the other; the scalpel excisorius, in the shape of a lancet-point on one side and of a mallet on the other; a hook and forceps used in obstetrical practice. The latter are said to equal, in the convenience and ingenuity of their construction, the best efforts of modern cutlers." (*Pompeii*, p. 348. T. H. Dyer. 1867.)

The Royal Bourbon Museum at Naples contains, as the result of the excavations at Herculaneum and Pompeii, inclusive of those just named, 199 different instruments.

The largest instrument found is entirely composed of bronze, and was, doubtless, used as a speculum matricis. Speculum, as we use the word, it is not; but it is a dilator, and as such probably was found efficient. Such an instrument is referred to by Paulus Ægineta, who directs "that the speculum be held by the operator, but the screw be turned by an assistant, so that the laminæ of the stalk being separated, the vagina may be distended." Following this is the speculum ani, also made of bronze; the dilating power of the branches is obtained by the closing of two handles, which cross at a central hinge.

Forceps were found in considerable number. Some of them, Professor Vulpes thinks, must have been used for artery-forceps before the application of a ligature; others, possibly, for the extraction of teeth, or for the extraction of pieces of bone from deep parts. Anatomical and depilatory forceps are also to be recognized. One singular pair is furnished with a ring, which surrounds both blades and plays over them, as in the sliding-forceps of modern surgeons. The greatest length of

any of the forceps is a little more than six inches, the shortest a little less than four inches.

Forty-five probes have been found in the buried cities, all of bronze.

One catheter has been discovered, also of bronze, possessing a double curve, and about ten inches long and three lines in diameter.

A lancet has been discovered, made of silver, and having a handle of bronze; the handle is beautifully turned and engraved. Along with this lancet, also was found a spoon of bronze used for examining the blood drawn from a vein.

Several cupping instruments, all made of bronze, have also been found.

A lever of bronze for restoring fractured bones to their places in cases of compound fracture has been found.

Iron was used for some instruments; *e. g.*, for scalpels, hooks, etc., of which several examples have been found.

A curiously shaped instrument has been found, probably a lithotome; and even of somewhat the same pattern.

Another most interesting article of an allied character, is that of the distinguished Professor FONSSAGRIVES, in the *Annales d'Hygiène Publique et de Med. Légale*, for April, 1868, entitled *La Maison chez les Anciens*. He shows that the ancient cities were usually built with low houses and large gardens. Nineveh was ten times more thinly inhabited than Paris. Rome, on the contrary, was twice as densely populated as this modern city, the houses being close together and many stories in height. The streets of the Roman cities were narrow, which is advantageous rather than otherwise in a hot climate. Cellars were small, and certainly not common, which must seriously have reacted on the health of the inmates. The sleeping apartments were always small, as was also the kitchen. The latter was frequently placed close to the privy, a neglect of hygienic principles too often found in modern dwellings.

The furniture of the chambers was generally very simple until late in the empire, when luxury was introduced. Light and air were generally admitted by the doors only in the inferior grades of houses; but in the better class glass windows were common. The cleanliness of the houses was by no means remarkable. The waste water from the roof and the kitchen all passed into the streets, and the garbage followed the same path. The water-closets were close to the kitchen, and as they do not seem to have had wells attached, it would appear that they were cleaned as often as necessary by the slaves. Chimneys, it would appear, were unknown in Rome, cooking and warming being accomplished by open braziers, or at fires from which the smoke passed off by a hole in the roof. They also adopted, for their larger buildings, large furnaces, from which hot air was conveyed in tubes to the different rooms. On the whole, this interesting memoir increases our respect for the wisdom of the ancients in matters of public hygiene.

Studies in the History of Medicine.

Among the most important publications on this branch—the contents of which we will only refer to—has been that of Dr. E. R. PFAFF, of Dresden, on the simple or primary articles of the ancient Arabian Materia Medica, and their therapeutical applications, in the *Deutsche Klinik* (Nos. 19, 22, etc.). They are drawn chiefly from the writings of Serapion, Averroes, Rhazes, and Avicenna, and are described briefly and identified with their modern synonyms.

Earlier in the year, in the same journal, a series of interesting articles appeared from the pen of Dr. R. FINCKENSTEIN, of Breslau, on David Semmer and the Schlesian physicians of the sixteenth and seventeenth centuries. They indicate a thorough study of this little-known department of medical history.

Again, in No. 13 (March 28th) of this periodical, is an Historical Notice of the Indirect Compression in Aneurisms, by Dr. GEORGE FISCHER. He criticizes the remarks of Paul Broca on this point, and concludes that Prof. Ferd. Leber, of Vienna, and not Dr. Guattani, of Rome, first introduced this method in 1770, though he concedes that the latter discovered it independently very soon after.

II. STATISTICAL MEDICINE.

Mortality in London Hospitals.

The *Times* gives the following statistics of mortality in the various public institutions of London, in the year 1867. We borrow it from the *Medical Gazette* of January:

Of every 1000 deaths registered, 65 occurred in one or other of the thirty-five metropolitan hospitals. Of the deaths in these excellent institutions, 3813, or 47 per 1000 of the total deaths of London, occurred in the sixteen general hospitals; 1167, or 15 per 1000, in eight hospitals for special diseases; 72, or 1 per 1000, in four lying-in hospitals; and 146, or 2 per 1000, in seven military and naval hospitals. A certain number of the persons who died in the metropolitan hospitals came from other parts, and certain numbers contracted diseases in the wards; but these cases, probably, did no more than compensate for the residents of London who left it consumptive to die elsewhere. There were, also, three hospitals and asylums for foreigners, in which 96 deaths occurred, being in the proportion of 1 per 1000 of the total deaths; 195 deaths, or 2 per 1000, took place in four military and naval asylums. In the nineteen lunatic asylums, 382 deaths were registered last year, being in the proportion of 5 to every 1000 deaths; but two large lunatic asylums, Hanwell and Colney-Hatch, in which many London lunatics die, are beyond the precincts of the metropolis. In the forty-six metropolitan workhouses there were 7088 deaths, or 88 out of every 1000 deaths, in London, occurred among the inmates of workhouses. Thus, the total deaths last year, in the 119 metropolitan public institutions, were 13,054; or, in other words, of every 1000 deaths in London 162 occurred in public institutions.

Statistics of Population.

A paper in the *Boston Medical and Surgical Journal*, for April 2d, 1868, translated from the Norwegian, upon the relative proportion of males and females in population, shows, first, that in various European countries there is an excess of females as compared with the males, varying from two to nine per cent., and this disproportion is still further increased in the cities, reaching in the cities of Swe-

den an excess of sixteen per cent. Second, that the annual number of deaths is considerably less among females than males. Third, that despite the much greater number of male than female children that die in utero or in birth, there is still an excess of males born alive, varying from five to nine per cent. Fourth, the mortality during the first year is much greater for male children than for female. Fifth, that statistics, as far as they have been gathered, go to prove the propositions that seniority of the husband produces more male children, equality of ages a slight preponderance of females, which is very materially augmented if the wife be the senior.

Effects of War on Population.

The *Boston Medical and Surgical Journal*, for May, 1868, calls attention to some important statistics on this subject. It remarks:

On looking at the deductions drawn by Dr. George Derby, from the Massachusetts Registration Report, for 1866, some of the results arrived at from a comparison of statistics are so striking as to deserve to be widely read and well considered. We are told that:

"The last five Registration Reports of Massachusetts have had to deal with a state of war. Happily, we have now returned to the condition of peace which existed in 1860. During the whole period, from 1861 to 1865 inclusive, the normal relations of births, deaths and marriages have been singularly perverted. The war and its influences entered every household, killing its members, preventing marriages; and in a still greater degree affecting births, by removing from their families those who would have otherwise become the fathers of children. During 1865, this unusual condition ceased, and we have now, for the first time in six years, a state of peace, the effects of which on the natural increase of population are abundantly evident in the statements we have now to make. . . . The births have increased by 3886; the marriages have increased by 1876; the deaths have diminished by 2525."

Notwithstanding this increase, however:

"The indirect effects of the war upon population are seen with more or less distinctness in all recent reports; but the census shows the direct effect in a marked diminution of adult males between the ages of twenty and sixty. Thus, instead of 266,049 in 1860, we find 249,806 in 1865. Their numbers had diminished by 16,243, in spite of a gain to the general population of 35,965. This is a serious loss, coming as it does exclusively from the producing or 'bread-winning' class, and its effect upon births will also be at once perceived."

Mortality in the United States Navy.

Dr. P. J. HORWITZ, Chief of the Bureau of Medicine and Surgery, U. S. Navy, in a report, December, 1867, gives the following statistical table, showing as nearly as possible the average strength of the Navy, including officers, men, etc., with total number of deaths from 1850 to 1866, inclusive:

YEAR.	Average strength.	Number of deaths.	Proportion of deaths.
1850,	9,087	129	.0141
1851,	9,063	85	.0093
1852,	9,103	81	.0088
1853,	9,051	84	.0092
1854,	8,975	193	.0215
1855,	8,982	115	.0128
1856,	9,962	119	.0119
1857,	10,163	123	.0121
1858,	11,895	155	.013
1859,	11,895	115	.0096
1860,	11,000	121	.011
1861,	20,000	178	.0089
1862,	25,905	575	.022
1863,	40,000	1,048	.0262
1864,	43,787	1,373	.0313
1865,	32,641	930	.0284
1866,	17,193	310	.018

III. STATE MEDICINE.

Ventilation.

Even among medical men, great and singular ignorance exists on this all-important topic. Nearly a century ago, Dr. BENJAMIN FRANKLIN, writing to Dr. Ingenhaus, physician to the Austrian Emperor, remarked, "You physicians have of late happily discovered, after a contrary opinion had prevailed some ages, that fresh and cool air does good to persons in the small-pox and other fevers. It is to be hoped that in another century or two, we may all find out that it is not bad even for people in health." But the philosopher was altogether too sanguine in his hopes. Taking up the instructions of the Board of Health for the prevention of the cholera in Philadelphia for 1866, we read, "After four o'clock in the afternoon and through the night, keep the windows closed. Avoid the night air as much as possible," etc.

These frequent recommendations, in the words of Mr. L. W. LEEDS (*Lectures on Ventilation*, N. Y., John Wiley & Son, 1868), are "simply recommendations to smother ourselves to death, because the foul, poisonous exhalations from our lungs cannot be removed from our chambers without being replaced by night air; there is no other fresh air at night but night air." His whole essay is a startling commentary on the gross ignorance prevailing on this vital subject.

Another blunder often encouraged by ignorant physicians and architects, is that which confuses cubic space with fresh air. On this point the *London Medical Times and Gazette* remarks:

"The notion that increased space provides for purity of atmosphere is true in a limited sense, but it is so under conditions totally different from those of the workhouse wards. It is true of rooms occupied temporarily, but is inapplicable to wards constantly tenanted by a definite number of patients. The difference hinges on an interesting point of science, which has been so well laid down by Professor Donkin, F.R.S., (a) that we cannot refrain from giving a brief explan-

ation of it. It is now generally acknowledged that the products of respiration, like other gases, obey rigidly the law of diffusion, and that even a single cubic foot of air exhaled from the lungs, almost immediately spreads itself through the atmosphere of a room, and is, in fact, diluted in the surrounding air. Supposing, then, a man occupying a room of definite size, it is evident that, unless as much fresh air is admitted into the room during each respiration as that polluted by the lungs during the same period, the atmosphere of the room must continue to be more and more saturated with poisonous products. If the room be a large one, the time taken to saturate its atmosphere will be greater than if it be a small one; and if its size be vast, and it is occupied but for a limited period, it will be necessary to introduce per hour, a less amount of air than would otherwise be requisite. Under such circumstances—intermittent occupation—cubic space is an important element. The large room has not become poisonous at the time its tenant leaves it, and before it is again required for occupation, *diffusion* has purified its atmosphere for the next inhabitant. Here lies the blunder involved in the cry for 'cubic space' which seems to have fastened itself upon the public. If the well-intentioned but ill-qualified persons who initiated it will take the trouble to go into the mathematical examination of the point, they will find that, diffusion admitted, what Professor Donkin alleges is rigidly correct—that 'the degree of purity of a room would ultimately depend in no way on the size of the room, but solely on these two things—(a) the rate at which the emanations are produced, and (b) the rate at which the fresh air is admitted.'"

A fertile cause of impurity of air has been recently asserted by M. CARRET, one of the physicians of the Hôtel Dieu of Chanbery, to be the use of cast-iron stoves. We find by the London *Lancet* of March, 1868, that an epidemic of typhoid fever which broke out at the Lyceum of Chanbery, was regarded by this author as being influenced by a large cast-iron stove in the children's dormitory. General Morin speaks in the highest terms of M. Carret's memoirs, to which the recent experiments of MM. Trorst and Deville give additional importance. These able investigators have established that iron and cast-iron when heated to a certain degree, become pervious to the passage of gas. They have been enabled to state the quantity of oxide of carbon which may, as they suppose, transude from a given surface of metal, and have shown that the air which surrounds a stove of cast-iron is saturated with hydrogen and oxide of carbon. They conclude that cast-iron stoves when sufficiently heated absorb oxygen, and give issue to carbonic acid. General Morin related some comparative experiments which had been performed by M. Carret, and which he said, corroborate this theory. Thus, after having remained during one full hour in a room heated to 40° (Centigrade) by means of a sheet-iron stove, M. Carret perspired abundantly, got a good appetite, but felt no sickness whatever; he had obtained the same result with an earthenware stove; but the experiment when performed during only one half hour with a cast-iron stove, had brought on intense headache and sickness. M. Deville, at the same sitting of the Academy, supported these views with considerable warmth. The danger which attended the use of cast-iron stoves, he said, was enormous and truly formidable. In his lecture-room at the Sorbonne he had placed two electric bells, which were set in motion as soon as hydrogen or oxide of carbon was diffused in the room. Well, during his last lecture, the two cast-iron stoves had scarcely been lit when the bells began to ring.

Subsequent to this notice in the *Lancet*, we have observed that the discussions

in the Parisian Academy of Medicine tended to throw doubt on these alleged observations. They should, however, not be overlooked.

Prevention of Venereal Diseases.

The absurd and unworthy so-called "moral" objections to a surveillance and regular examination of prostitutes, with the view to prevent the extension of venereal diseases, are slowly giving way both in England and America. The memorandum adopted by the Joint Committee of the British Medical Association, and the Social Science Association, as given in the *British Medical Journal*, for May, 1868; emphasizes the fact that legislation is urgently required in all populous districts, to direct and aid the execution of measures concerning the health of women, within the meaning of the Contagious Diseases Prevention Act, 1866,—when the main provisions of that Act shall be extended to the civil population of the kingdom.

In the same journal a writer says, speaking of this proposition: I do not know one of the nine objects on which the impulse to legislate may not soon be irresistible. Take that which has probably excited the most discussion of late—No. six, the prevention of enthetic diseases. Will any one venture to deny the necessity for some general legislation on the subject? Shall it longer be said that Great Britain is the only country in the civilized world in which nothing is done by law to redress or even mitigate the evils of prostitution? Does any one doubt that scientific agency is necessary "to direct and aid the execution" of such measures.

So, also, the Report of the Metropolitan Board of Health, for New York city, for 1868, recommends that similar steps be taken for the eradication of venereal diseases. They say (p. 306):

"For this purpose we would suggest, first, that it shall be the duty of all hospitals and dispensaries in the Metropolitan Health District, which receive pecuniary aid from the State, cities or counties, to receive, treat, prescribe for, and dispense medicines to all persons affected with venereal diseases, on the same terms as persons affected with other diseases, without any exceptions, distinctions, or charges, founded on the nature of such diseases.

"That all keepers of houses of prostitution and assignation shall be registered; so shall all prostitutes who live in these houses; that these registers shall contain their names, ages, nativities, and whether married or not. These registers shall not be open to public inspection. The owners of all houses of prostitution and assignation shall be also registered.

"In case any woman shall gain admission into a house of prostitution, the fact is to be announced to the police, and the police shall not allow such woman to remain in such house unless she is a registered prostitute.

"That the Metropolitan Board of Health shall establish an hospital for prostitutes affected with venereal disease, and shall appoint physicians for the same, the custody of such hospital to devolve upon the police.

"That the Board of Health shall cause to be inspected the houses and persons of all prostitutes, and if any prostitute is found diseased with any venereal affection, shall send her immediately to the hospital."

From another and a distant quarter the same demand for legislative control of prostitutes is heard. A writer in the *Blätter für Reform des Sanitäts Wesen*, Vienna, March, 1868, asks, "Has any one the silly idea that prostitution will be countenanced because it is subjected to Governmental supervision? Or is it sup-

posed that prostitutes will be increased or made more immodest if they are registered and examined? Or that their boldness will be augmented when they ascertain their numbers? Or is it doubted that it is time for official interference when a growing evil is poisoning whole families and generations?"

New Processes of Embalming.

The *Scientific American*, for April, has the following account of a new process of embalming:

"Professor Charles A. Seely and Charles J. Eames, of New York city, have obtained a patent for the impregnation of dead bodies with carbolic acid, which is said to be superior to the old Egyptian method.

"We apply the antiseptic liquid to the surface of the body, and also when deemed advisable, we inject it into the stomach and intestinal canal. For the external application we take a solution of the acid in water, or other convenient solvent, and wash the body with it by means of a sponge or cloth, and when the first washing has been finished, we repeat it one or more times; or, when convenient, we immerse the body in a weak solution of the acid for a short time; or we saturate cloths with a solution of the acid, and then wrap or wind the body in the cloths so saturated, and allow them to remain on the body. The body thus brought into contact with the liquid absorbs it by degrees, and the decomposition of the body is arrested or prevented.

"We have found that in many cases, and especially in cold weather, the external application of the antiseptic is sufficient to prevent change in a few days. But when it is desirable to keep the body for a long time, we inject a small quantity of the antiseptic into the cavities of the chest and the abdomen. We make the injection by the use of a syringe, and at the natural external openings to the cavities. The amount of liquid to be injected should be at least a few ounces, and we find no objection to the use of such a quantity as will distend the cavities. In addition to the application of the antiseptic, as above described, we sometimes find it useful to place cotton, wool, lint, or cloth, saturated with the acid, in the nostrils and in the ears.

"Our process when carried out, as above described, is entirely efficient for the preservation of a body during the ordinary intervals between death and burial. But when the process is used as an embalming process, or when there are no objections to making incisions into the body, we prefer to inject the acid into the arteries and veins, or in addition to the ordinary external and internal application of the acid, we inject some of the acid through an opening of the skull into the substance of the brain.

"For a further security against decomposition of the body, and especially when the cloths saturated with the liquid are not kept permanently about the body, we place at the bottom or sides of the coffin sheets of felt or cloth, or similar fibrous material, which has been saturated or dampened with the antiseptic acid.

"In combination with carbolic acid, we have used bisulphite of lime and bisulphite of soda, and a solution of sulphurous or acetic acid, with advantage. But we are satisfied that carbolic acid is the most active and useful agent for our purpose, and that any addition to it is not essential to success. We have found the use of a mixture of carbolic acid with sawdust, or other inert granular matter, often advisable in the bottom of the coffin."

Still another and a more remarkable process is quoted from the *Tribune Médical* by the London *Medical Times and Gazette*. The account runs that—

“M. Marini, an Italian embalmer of Cagliari, in Sardinia, has so matured his procedure as to cast into the shade even the preparations of Professor Brunetti, which excited so much attention at the Paris Exhibition. His method is at present a secret, but he is said to be about to reveal it at the instigation of the Medical Institute of Florence. At all events some of the results reported are marvellous enough. By it all parts of the body, solid or fluid, can be effectually preserved, whether flesh or blood, brain or bile, &c. So long, too, as desiccation has not become quite complete, he can restore to the mummified body or its limbs their natural form and volume, both internally and externally, so that the muscles, tendons, veins, arteries, and nerves reassume completely the aspect and transparency which they possess in a body which has only been dead for some hours. In 1865 he had, at Cagliari, so completely preserved the body of Martini, the historian, that, after four months, thanks to the extraordinary action of the “liquid reviver,” all their suppleness was restored to the limbs, and the body was able to be dressed and placed in a chair, in order that a photograph might be taken, and which exactly resembles one taken from a living person. During his recent visit to Paris, M. Marini, had an audience of the Emperor, who had long been admiring one of the marvels of the new art, which was nothing less than a fragment of the arm of an Egyptian mummy, to which M. Marini had restored, after perhaps five thousand years, if not its color, at least its suppleness and its appearance of a human limb. This arm, which Professor Sappey had sealed up in 1864, and which has been dried and moistened again a hundred times, presents all the appearance of a living arm. Also the entire body of a rabbit was exhibited, which, although dried, was so transparent, as to allow the minutest details of its organization to be inspected. Finally, the embalmer, wishing to show how his discovery may exhibit an art eccentricity, has constructed a table, which is to be transferred to one of the museums, composed of an extraordinary mosaic of petrified blood, brain, bile, &c., in which are embedded four human ears, and on which is raised a young woman's foot, having its color and transparency perfectly preserved. Some of our readers might think the proper place for this *article de vertu* would be Madame Tussaud's ‘Chamber of Horrors.’ Not so. M. Marini's eulogist informs us, ‘Science and art here throw light on nature in a manner so novel and so pure that all idea of the horrible disappears, to leave no other feeling in the mind of Napoleon III, than one of profound admiration.’ And the Empress was fetched to see the sight.”

Another excellent method, which is easy of application for the preservation of anatomical specimens, was discovered by Prosector VAN VETTER, in Ghent, in 1862. It is described in the *Allg. Med. Central-Zeitung*, for February 26th, 1868. To seven parts of glycerine, one part unrefined brown sugar, and one-half part nitrate of potassa are added. In this the member or part to be preserved is laid for a length of time depending upon its size. A hand, for example, requires a week or ten days. When first taken out, it will be found as hard as a bit of wood. It is then hung up in a dry, warm room, and the superfluous glycerine evaporates. After two or three months, the muscles will be found soft and flexible, retaining their natural size and color, and admirably adapted to demonstrating, for example, the action of the muscles. The preparations should be carefully varnished, to prevent them from moulding, and preserved in a dry, warm atmosphere.

The Army Biscuit.

On this important article of food, Prof. J. H. SALISBURY has the following remarks, in the *St. Louis Medical Reporter* for April, 1868:

The amylaceous army biscuit diet of the common soldiers, beyond its fermentative and carbonic acid poisoning effects, does not furnish to the system the proper proportion of ingredients for healthy alimentation and nutrition; and hence results a scorbutic condition which renders the disease obstinate to treat, unless this state is recognized and particularly attended to. This explains the reasons why the vegetable acids, combined with potassa and iron, are so useful in this disease. Rochelle salts are admirably adapted for exciting intestinal epithelial activity and secretion, and absorption in the alimentary walls.

Any one kind of food too long continued has a tendency to produce derangements in the system of a scorbutic type. Amylaceous matters, too exclusively used, tend to excite abnormal actions in the parent epithelial cells of the mucous surfaces and of the glands; while any one kind of animal food, too long and exclusively eaten, produces derangements that show themselves more strongly in the skin and mouth. A too free use of oils, and fatty food, and alcoholic beverages, produces the red blotched face and swelled carunculated nose, oily surface, and erythematous swelling and redness of the skin generally.

Defective Alimentation a Cause of Disease.

In a valuable article on this subject by Prof. J. H. SALISBURY, continued through several numbers of the *St. Louis Medical Reporter*, the writer reaches the following conclusions:

1. Vegetable food, and especially that of an amylaceous and leguminous character, when too exclusively and continuously used, produces constipation, and fermentative and scorbutic conditions.

2. These conditions show themselves in the following abnormal states: The formation of fibrinous masses (emboli) in the capillary vessels of sensitive, irritated and irritable parts, resulting in congestions, inflammations, diarrhoea, paralytic tendencies, loss of voice, and diseases of the eye and ear, with pains and aches in the extremities and back; and also a disposition to cell development, from which result tubercular depositions in the lungs.

3. The abnormal conditions excited by an amylaceous and leguminous diet, require, as dietetic and remedial means, albuminous animal food, instead of vegetable, with anti-fermentatives for controlling zymotic action. In connection with which are indicated the vegetable acid salts of potassa and iron for promoting the solution of the fibrinous clots and thinning the blood, and promoting intestinal absorption and secretion.

4. These conditions in armies are developed mostly during and immediately following campaigns, when the men are confined too much to an amylaceous diet.

5. The officers who can and do carry a variety of food, with the means of cooking it, are exempt from this class of diseases.

6. The first manifestation of abnormal tendencies, after beginning to feed too exclusively upon amylaceous and saccharine food, or on any of the products of their fermentation, is *constipation* and dyspeptic symptoms.

7. This constipation is soon followed by fermentative changes, and the development of intestinal gases and yeast plants in the feed too long delayed in the alimentary canal.

8. That as soon as gases begin to develop in the intestinal canal, yeast plants begin to develop in the alimentary matters to an abnormal extent.

9. That this development of yeast plants is evidence of the inauguration of fermentative changes in the starchy food.

10. That this fermentation and development of yeast plants continue to increase till diarrheic conditions are produced.

11. That a peculiar gelatinous, colloid matter—usually in little masses scattered through the fæces—shows itself to a greater or less extent as soon as the diarrhoea commences; that, generally, this (colloid) matter is present in direct proportion to the severity of the disease.

12. That this colloid development is not the cause of the diarrhoea, but merely the consequence of certain saccharine and fermentative conditions of the system, in which the alimentary canal becomes a proper nidus for its development. As soon as these systemic conditions are overcome, this colloid matter ceases to develop, and disappears entirely from the fæces. It hence may be regarded as merely the consequence, and not the cause, of certain systemic conditions. Its development appears, however, to act as poison, and increases the intestinal lesion.

13. That the system, on the amylaceous diet, becomes highly saccharine and fermentative, so that even the mucous secretions often contain sugar, and rapidly pass into fermentative states, developing yeast plants.

14. That this saccharine condition is abnormal, and appears to be a peculiar type of the so-called *scorbutic taint*, and yields more readily to an *albuminous animal diet*, with anti-fermentatives and the vegetable acid salts of potassa and iron, than to any other dietetic and remedial means.

15. The fermentative changes in the alimentary canal are always more active towards evening and during the night, and go on increasing from day to day, until

16. Finally, the gases and yeast plants developed produce so much intestinal irritation that diarrhoea ensues, which soon becomes chronic, and not at all amenable to the treatment of ordinary diarrheic conditions.

17. Accompanying the fermentative changes is always a paralytic tendency, more or less strongly marked. This is manifested in the alimentary canal, and especially in the large intestines, next in the extremities, the legs prickling and “getting asleep” frequently, with ringing in the ears, and a numb, mixed-up, confused feeling in the head, etc.

18. This paralytic tendency appears to arise from defective nutrition, and the pressure produced by the clogging up of the capillary vessels with fibrinous masses, from which result serious congestions, etc., as in the intestinal walls, lungs, nerve-centres, etc.

19. A cough, with more or less hoarseness, usually sets in, especially during the night and on getting up in the morning, accompanied by the expectoration of a thick, sweetish, cream-colored mucus.

20. This is followed by more or less constriction in breathing, with frequently palpitation of the heart on any excitement.

21. After the diarrhoea sets in, there is usually a remarkable tendency to fibrinous depositions in the heart (thrombosis), and to the clogging up of the pulmonary

vessels with fibrinous masses (emboli), with tubercular tendencies, and pains and aches in the extremities and back, simulating those of muscular rheumatism.

22. The disease so fatal to animals, known as "hog cholera," is the same abnormal state of the system as the chronic diarrhoea of armies.

23. Both arise from the same cause, viz., the too exclusive feeding upon amylaceous or saccharine food, or upon the products of their fermentation.*

24. One of the primary lesions appears to be the clotting of the blood in the capillary vessels and heart.

25. There is a strong probability that the conditions of the system which result in diabetes are similar to those producing chronic diarrhoea, and that the causes are analogous.

26. There is also evidence that the conditions of the system which result in bronchocele are similar to those which give rise to chronic diarrhoea.

27. There is strong evidence, also, that the condition of the system which gives rise to summer complaints and fluxes in children, especially those where the stools are gelatinous and green (the so-called colloid matter), are similar to those that result in chronic diarrhoea. They appear to arise from the too exclusive and continued use of starchy and saccharine substances and fruits, which children are largely indulged in.

28. The jelly-like matter of chronic diarrhoea is colloid, and emanates from the epithelial tissues of the alimentary walls.

29. That this colloid matter is not the cause of chronic diarrhoea, but merely the consequence of certain glycogenic conditions of the system, brought on by feeding too exclusively upon amylaceous food; that after it begins to develop in the alimentary canal, it tends to exhaust the system and aggravate the lesions and the disease.

30. That sugar, vinegar, carbonic acid, and even alcohol beverages, when too exclusively and continuously used, tend to produce similar conditions of the system with that of amylaceous food.

31. That amylaceous and saccharine matters, with all the products of their fermentation, when too exclusively and continuously used as food, or taken into the system in any way, result in similar lesions and abnormal conditions, and tend to produce in the heart and large vessels fibrinous depositions, which result in thrombosis and embolism, in congestion and hepatization of the lungs, congestion and inflammation of the intestinal walls, with the damming up of the blood in the capillaries that nourish the nerve-centres and extremities, resulting in paralytic tendencies, with sometimes loss of voice and diseases of the eye and ear.

32. That these make up the great mass of the most obstinate, lingering, pitiful, and fatal diseases of the army, decimating it more, and bringing upon it and those at home more suffering and grief than the accidents and casualties of battles and all other diseases combined.

33. That if we would prevent these diseases, we must change the present army diet.

34. That the *desiccated beef and vegetables* make an anti-scorbutic, anti-fermentative, highly portable, nutritious and good diet for the soldier, and could be furnished him at a cost not exceeding the present ration.

* The diarrhoea is but one expression or symptom, out of many, of the peculiar systemic abnormal conditions excited by such food.

35. That of this food he can carry thirty days' rations in his haversack more easily than he can five days' rations of his present food.

36. That with this food the heavy and cumbersome commissary trains that so impede an army may be dispensed with.

37. That at present the great bulk and weight of the soldier's food is water—a heavy and unnecessary ingredient to carry—and which makes up from five to seven pounds in every six to eight, and which he can supply at the numerous springs, brooks, and rivers along his march. In the desiccated food this water is taken out and the food compressed into a small bulk, so that he can carry six days' rations of it more easily than one of his present food.

38. That with this desiccated food he need never be without a good substantial diet that will sustain him during the labors and fatigues of the march, and protect him from the numerous dreaded scorbutic and fermentative diseases.

39. That this *desiccated beef and vegetables* have already been submitted to a practical test in campaigning—in Dr. Hayes's Arctic expedition—and found to work admirably as a good, nourishing, anti-fermentative, and anti-scorbutic food. In Dr. Kane's expedition this food was not used, and his men suffered much from scurvy and frost-bites. In Dr. Hayes's expedition, although he reached a more northern point than any previous explorer, yet he did not have a solitary case of scurvy among his men, nor a single frost-bite.

40. That beans and peas have a marked tendency to produce flatulence, indigestion, intestinal derangements, and hence they should be entirely abandoned as army food. The poor of our cities that feed upon the bean and pea soup, provided for them at the public expense, are soon affected, if they live upon this food too exclusively, with diarrhoea, which is often obstinate and protracted.

Signs of Death.

The ghastly stories which periodically go the rounds of the public press of persons buried alive by mistake, should render physicians exceedingly careful to ascertain the actual departure of life, especially in epidemics when the corpses are usually quickly interred. In the *Gazette Méd. de Lyons*, for March, 1868, M. Martenot de Cordoux, of the Lyons Military Hospital, states the following as an infallible means of deciding on the certainty of death. Bring the flame of a candle in contact with a finger or toe for a long enough time to raise an ampulla or bladder. If this contain serosity, life is certainly still present, while, if it burst, discharging nothing but vapor, life is as certainly extinct. In one word, a dry vesicle is a sign of death, a liquid one of life.

Signs of Death by Drowning.

In the *Med. and Surg. Reporter* for May 2d, 1868, Dr. C. B. BRAMAN, of Mass., gives the following signs of death by drowning:

"The body of a drowned person usually presents the following appearances: It is very cold, apparently colder than the actual temperature; the limbs are more or less stiff, according to the time that has elapsed since death; the visage is swollen, oftentimes dark-colored, sometimes pale; the eyes are half open, with the pupils dilated; the mouth is filled with froth; the tongue is advanced beyond the teeth; thorax and abdomen elevated, the latter oftentimes being much distended

—this condition is peculiar to those who perish in clear, cold water, as the sea, rivers, etc. The ends of the fingers are oftentimes found rubbed or scraped, and dirt or sand similar to that on the bottom of the water, is found under the nails. Coupled with this is the negative sign of anything which could have caused death previous to submersion.

"The trachea and bronchi of a drowned person will be found to contain froth, oftentimes bloody. Lungs cedematous. The auricles and ventricles are filled with clotted or fluid blood, and the right auricle and ventricle generally more so than the left. The depressed diaphragm and stomach containing suspicious fluid, are signs not to be neglected. (ORFILA states that the latter is the only reliable sign of submersion during life, as a struggling person would naturally swallow the fluid in which he was submerged.) The brain also, in this case, will show a certain turgidity in its vessels, oftentimes in exact proportion to the delay or speedy approach of death.

"I have myself noticed a peculiar expression of countenance, which is never forgotten by those who have once seen a drowned person, and there are those who hold this to be an infallible indication."

The New York *Nation* in calling attention to this latter remark of Dr. B. observes :

"We do not remember to have ever met with it. Neither have we ever anywhere seen it in print—what wreckers and sailors assert—that the bodies of drowned men, when they rise to the surface, are found floating with the face downward, while the faces of women drowned are turned toward the sky ; nor do we know if it is true."

It is likely to be true in the majority of cases. The wider iliac bones and larger gluteal regions of the female, combined with the larger and looser mammæ, which latter in a state of advancing decomposition would become much more buoyant than the former, by the development of gases, would naturally tend to give the cadaver this position in a liquid.

Death by Suffocation, Strangling, or Choking.

Professor LIMAN, in the *Vierteljahrsschrift für Gericht. und Offent. Med.*, for January, 1868, derives the following important conclusions from a discussion of the signs left by these various kinds of violent death.

1. There is no specific, internal, pathological lesion which allows us to distinguish apart death from smothering, hanging, strangling, or choking.

2. An ecchymosed mark left by the cord is not always found either in hanging or strangling. When in the track of the cord or its immediate vicinity bloody spots are found, it can be assumed that some other violence has been used on the neck.

3. When the neck has been encircled tightly with the cord and the corpse left lying for some time, no excoriated spots are produced by the cord except when the skin has previously been torn.

Ecchymoses, as a Sign of Death by Suffocation.

The celebrated expert, AMBROISE TARDIEU, of Paris, in the *Annales d'Hygiène Publique et de Médecine Légale*, for January, concludes a valuable investigation on this subject in the following words:

"I repeat with a firm and absolute conviction that as far as regards the general signs of death by suffocation, that, with the reservations I have made, the mere presence of these alterations in the tissues, and especially of sanguine extravasations disseminated under the pleura and the scalp, no matter in what number or extent, is sufficient to demonstrate in the most positive manner that suffocation has been in fact the cause of death. To these lesions are often but not constantly added ecchymotic spots under the pericardium, rupture of superficial pulmonary vesicles, and the presence of a fine white, or slightly rose-colored, froth, in the bronchial tubes; as also certain external marks of violence, as flattening of the nose and lips, excoriation of the face, and depression or crushing of the abdominal or thoracic walls.

"The multiplicity and extent of these various lesions can measure to a certain point if not the duration at least the violence of the resistance offered. It is well in considering these signs to take into consideration the constitution and strength of the victim, and the manner in which the suffocation was brought about."

The same subject is treated by DOMMES in the *Deutsche Ztschr. für Staatsarzneikunde*, Bd. 25, quoted in the *Prager Vierteljahrschrift für Prakt. Heilkunde*, for April, 1868.

Dommes speaks particularly of the capillary ecchymoses under the epidermis. They look like flea-bites, but with more sharply defined limits, and have a diameter from half a line to a line. They appear chiefly on the back, and are caused by small quantities of very thin but dark blood. He is of opinion that they arise from the capillary congestion incident on suffocation, since the increased pressure on the bloodvessels in this mode of death would easily give rise to these appearances where the capillary walls were thin, especially as an unusual fluidity of the blood always accompanies this condition.

The editor of *Prager Vierteljahrschrift*, adds that he has frequently observed in cases of suffocation, such ecchymoses in great numbers, in size not larger than a pin's head, under the scalp, when this latter had suffered no violence.

The Breslau Test.

This is a useful test to ascertain whether an infant has breathed before death. If the stomach and bowels float in water when in the condition they are first taken from the body, the child has been born alive. Dr. LIMAN has submitted this proceeding to a careful investigation, and his results are mentioned and indorsed by Professor MASCHKA in the *Prager Vierteljahrschrift für Prakt. Heilkunde*, April, 1868. They are these: 1. For recent cases this is an excellent test, well calculated to support the conclusions derived from an investigation of the lungs. When the stomach and bowels, or the greater portion of the latter is found to contain air in a fresh corpse, then it may be concluded with every probability, especially when the lungs support the experiment, that the child did not die after only a few inspirations. 2. When the corpse is already partly decomposed, the abdominal organs soft, and the lungs partly filled with gases, then the test is of little value, and of slight aid in supporting the uncertain testimony of the lungs. 3. When the test by the lungs is uncertain, the Breslau test is not calculated to remove the doubt, as it must be looked upon as one of subordinate value. These conclusions are derived from a careful examination of 84 cases.

Poisoning by Chloroform.

The following important case is reported by Dr. J. E. TEFRT of Springfield, Mo., in the *Western Journal of Medicine*, for December, 1867.

The subject of this report was a young man, aged twenty-eight, of good constitution, though considerably broken down by hard drinking. On the morning of July 17th he arose early, went out and procured two ounces of chloroform, returned to his room and swallowed the whole amount, undiluted. He had been drinking more than usual for several days, and was in very low spirits; and had several times, while partially intoxicated, expressed an intention of committing suicide. His family physician, Dr. W. P. Murphy, was summoned, and saw him at 7 o'clock, about three-quarters of an hour after the swallowing of the chloroform. I saw him a quarter of an hour later, and found him in a state of profound coma; the eyes fixed and glassy; the pupils of natural size, but insensible to light; the pulse about eighty, full and strong, and the breathing slightly stertorous. Signs of prostration were not apparent until about 8 o'clock (two hours after taking the dose), when the circulation began gradually to fail; the pulse became more frequent and feeble; the respiration became gasping and stertorous; the extremities became gradually cool; the pupils dilated and the skin assumed a purple and mottled color. At 11 A. M. the pulse was entirely absent at the wrist; the arms cold to the shoulders; the legs cold to the knees; the breathing very labored, and the whole body wet with a profuse clammy perspiration. From that time gradual signs of reaction commenced. When I saw him, no attempt had been made to evacuate the stomach. No stomach-pump was at hand. When Dr. Murphy first saw him he was totally insensible, and unable to swallow, and he judged that the stomach would not respond to the influence of an emetic, even could it have been introduced into it. Our treatment consisted of measures to counteract prostration—at first of sinapisms to the epigastrium, dry heat, friction to the extremities, and the administration *per rectum*, of brandy and carbonate of ammonia. Later we employed hot brandy to the extremities, and hot turpentine to the spine, followed by vigorous rubbing. The enemata provoked copious alvine evacuations of dark bilious matter. Reaction was very gradual and feeble. At 2 P. M. he spoke, and then first began to swallow. Iced mucilage of slippery elm was given him in small quantities, and small lumps of ice to swallow *ad lib*. At 6 P. M. he complained of a terrible burning pain in the stomach, and begged piteously and incessantly for water, though more than a swallow would induce vomiting. He had passed a quantity of blood mixed with bilious matter from his bowels.

July 18th, 7 A. M., pulse 130, and weak. He passed a restless night, though he took three 1 gr. opium pills at intervals. Had not slept more than ten minutes at a time. There was still occasional vomiting. Ice and occasional opium pills were continued.

July 19th. Better; pulse 115, and fuller. Rested better and there was no return of the vomiting. Lime-water and milk were ordered as nourishment. From this time forward he rapidly improved, and was out in a week. I have seen no reported case where recovery followed after so large a dose of chloroform as two ounces, *unless the stomach was evacuated of its contents*, as a part of the treatment.

In this case the evidence as to the amount swallowed is complete.

Investigation of Blood-stains.

This important medico-legal point has received a careful study by Professor BLONDIOT, of the Medical School of Nancy, in the *Annales d'Hygiène Publique et de Médecine Légale* for January, 1868. In summing up the various facts he brings forward, he concludes 1. That of the various methods used to recognize blood-stains, that which rests on the production of crystals of hæmine is, without contradiction, the most certain, the most constant, and the most obvious; 2. That this method is not at all difficult to execute, and only requires certain precautions to be observed, which, when they are once known is easily done; 3. That nevertheless there are certain circumstances when this method, like all others, produces no definite results; so that if the appearance of crystals of hæmine invariably proves the presence of blood, their non-appearance does not necessarily prove its absence.

Use of the Spectroscope and Micro-spectroscope in the Discovery of Blood-stains and Dissolved Blood.

W. BIRD HERAPATH, M.D., the distinguished toxicologist, gives some idea of the amazing minuteness of this method of analysis in a paper published in the *British Medical Journal*, March 7th, 1868.

The ordinary spectroscope, which answers very well for the examination of colored flames and comparatively large quantities of liquid, is not so well adapted for medico-legal inquiry, where the quantity of suspected fluid is sometimes extremely small. By a modification of the ordinary spectroscope, it would be possible to discover one drop of scarlet-cruorine diffused through a pint of distilled water. "But," remarks Mr. Herapath, "quantities like these are not always to be had; and a recent well-known case, in which I had the opportunity of first using the micro-spectroscope in a medico-legal inquiry, would have failed altogether if I had depended alone upon this 'fluid spectroscope,' as nearly all traces of blood-stains had disappeared from the weapon employed by the murderer, in consequence of the hatchet having been left exposed in the woods near Mountain Ash for several weeks after the deed was accomplished." (Case—Reg. v. Robert Coe; Swansea Assizes, 1866.)

It was only on the removal of the head of the hatchet that any appearances of blood were to be obtained from the surface of the handle, which had been protected by the iron ring; and, on carefully making thin sections of these stained portions of wood, and treating them with distilled water, a few drops only of a brownish-colored fluid were obtained, which coagulated and became discolored on boiling; also another drop, when placed in a very minute tube, about half an inch long and the one-eighth of an inch diameter, the total contents of which tube were one grain and one-third of distilled water, gave the optical absorption-bands due to old blood. This little drop of bloody-colored fluid was placed on the stage of the microscope, and examined with an inch Ross's objective, illuminated by an achromatic condenser; and the micro-spectroscope was inserted into one of the tubes of a binocular microscope, as an ocular lens would be employed. This form of instrument is that known as the Sorby-Browning Spectroscope, and it admits of great precision, as it has a lateral spectroscope, as well as a terminal one. These two spectra appear side by side in the field of view, and being perfectly

parallel, admit of examining substances by two sources of light at the same time. This form of instrument is very sensitive to small quantities of blood, and it would be perfectly easy to detect and ocularly examine the blood contained in the stomach of a flea, and even dilute it with a tablespoonful of water without losing its properties, especially if he had made anything like a successful forage upon some sanguineous individual. Mr. Sorby has distinctly obtained absorption-bands from a single half-corpuscle of blood, without having gone as far as this. My own observations have proved that it is possible to obtain very evident results from less than one-thousandth of a grain of dried blood, the coloring matter of which had been dissolved out by a drop and a half of distilled water.

In fact, in the Mountain Ash case, comparative experiments proved that the quantity of blood which led to conclusive results, did not exceed the one-thousandth part of a grain. The justice of the sentence was afterwards proved to the satisfaction of all parties, by the confession of the prisoner previously to his execution.

It is somewhat remarkable that, though various other bodies have to the eye all the appearances and color of blood, yet none of those usually met with have any spectra to be mistaken for those of the various forms of blood-coloring matter herein described. The generality of soluble red coloring matters absorb *continuously* more or less of the violet, blue, green, or yellow, even orange rays of the spectrum. Some wholly absorb the spectrum with the exception of the red ray, which they transmit. The well-known sulphocyanide of iron, often used by conjurers and chemists, and called artificial blood, is strikingly wanting in those optical absorptive powers or bands so indicative of cruorine or hæmatine in their various forms.

Only two substances have been found comparable in their optical effects to those of hæmatine,—a dilute ammoniacal solution of carmine and a similar solution of cochineal in ammonia; these colors are unstable and fade very quickly. The two absorption-bands are much broader and more diffuse than those of blood, though most like that of brown hæmatine, and only a novice in spectrum analysis could possibly mistake one for another, while the least attempt at chemical investigation would pronounce them different; the action of heat alone being sufficient to coagulate the coloring matter of the blood, whilst the carmine and cochineal would remain unchanged. But one great safeguard in medico-legal inquiries will be the absence of cochineal or carmine from those positions in which blood may by any possibility be found; some cloth fabrics alone being dyed by a mordanted cochineal.

Some scarlet cloths are of this character; and the carmine color being fixed by alumina, would be insoluble in cold water; whereas, the cruorine or hæmatine would dissolve with more or less facility according to age.

It is evident, therefore, that all these considerations render the detection of blood-stains by spectrum analysis a matter of little doubt or difficulty, even when in minute quantities. In conclusion, although spectrum does not go one step farther than we were before in our powers of discriminating human blood from that of other mammalian or red-blooded creatures, yet it gives us greater facilities of demonstrating the presence of the coloring matter of blood, even in inconceivably minute and almost invisible proportions; whilst the facility with which the observations can be made, is a great, if not the greatest recommendation to the employment of this method whenever practicable.

On the Guaiacum Process for the Detection of Blood.

Professor ALFRED TAYLOR has thoroughly revised all his former experiments in regard to this process, and gives the result in Guy's Hospital Reports for 1868:

"This process, which has for its object the detection of the red coloring matter of the blood, depends upon the use of two liquids; first, a solution of that portion of Guaiacum-resin which is dissolved by alcohol (830), and second, a liquid containing not ozone as Van Deen, the originator of the process, supposed, but antozone.

"A saturated solution of the inner portions of the resin, which have been excluded from the action of light and air, is made by digestion in alcohol (830), and the solution preserved in a black bottle to prevent the action of light.

"When a few drops of this solution is dropped in water, a milky white precipitate of the resinous principle is thrown down in a state fit for oxidation. The precipitated resin, exposed to the air, very slowly acquires a blue color, as a result of absorbed oxygen. Light alone appears to have no effect upon it. Dr. Taylor has exposed some of the freshly precipitated resin in hermetically sealed tubes to the action of light for many months without observing any change. Neither does light appear to accelerate the oxidation of the precipitated resin as the process seems to go on with equal rapidity in the dark.

"When the precipitated resin is added to a jar of oxygen, it becomes very rapidly blue, but the most remarkable change is produced by adding the precipitated resin to a jar containing ozone, as an ozonized atmosphere. The resin under such exposure acquires almost immediately a very intense blue color. These facts show that the bluing of the resin depends on the change of color produced by oxidation. As an additional proof of this, it may be stated that all those hyperoxides, which according to Schönbein contain a portion of their oxygen in the form of ozone, and are called by him ozonides, possess the property of directly coloring the resin blue. One drop of a solution of permanganate of potash renders the resinous precipitate intensely blue. This effect is also produced by the peroxides of lead and manganese, and those bodies which operate through the agency of water as oxidizers, such as chlorine, bromine, iodine, and hyponitric acid, and the hypochlorites.

"Mineral and organic compounds also possess this property in different degrees, and although we may infer that the resin is oxidized by nascent oxygen (ozone), it is not so easy in all cases to say whence this oxygen is derived.

"The persalts of iron, ferrocyanide, and ferric-cyanide of potassium, finely divided platinum (platinum black) also render the precipitated resin blue.

"Among animal substances gum, gluten, and unboiled milk, also effect this change, while starch, boiled milk, fibrine, and the *red coloring matter of the blood*, produce no change in color.

"As in all these experiments the mixture of resin and water is exposed to the air, it may be assumed that the oxygen is transferred either directly from the guaiacum-resin, or that the mixture of certain substances with the guaiacum causes a rapid absorption and transference of atmospheric oxygen. One fact, however, is certain: this property is destroyed by a very moderate heat, and is not restored on cooling.

"It is farther remarkable, that those substances which according to Schönbein,

contain oxygen in the form of *antozone*, as peroxide of hydrogen, peroxide of barium, and the peroxides of the alkaline metals generally, exert no oxidizing action on the resin, and do not blue it. Guaiacum-resin, as Schönbein pointed out some years since, is well adapted to distinguish the ozonides from the antozonides. Both oxidize iodide of potassium, and set free iodine, but it is only the ozonide containing *negative* oxygen which renders guaiacum-resin blue; the antozonides containing positive oxygen produce no such effect.

"Peroxide of hydrogen, added to the precipitated resin, produces no change of color. Peroxide of barium (antozonide) produces a distinct yellow color (owing to the presence of some baryta), but on adding a drop or two of acetic acid to correct this, the liquid becomes colorless and white. Liquids containing antozone act in a similar manner. Those ethers sold as ozonized, the essential oils, as those of turpentine and lavender, do not change the color of the resin. It is clear, therefore, that they do not contain any ozone, but as other facts show, they do contain oxygen as antozone. The name therefore given to these ethers and oils is based on a mistake. They resemble peroxide of hydrogen (antozone), and differ from the ozonides not only in this want of the oxidizing action on the guaiacum-resin, but also in the remarkable property, first pointed out by Schönbein, viz., of converting chromic into blue perchromic acid. The guaiacum-process for the detection of the red coloring of the blood, therefore rests upon the simple fact, that the coloring principle in all red-blooded animals has no direct oxidizing or coloring action on the resin, but when it is associated with another body containing antozone equally without any oxidizing action on the resin, the guaiacum is oxidized by the blood, and acquires a blue color varying in intensity according to the amount of coloring matter present. The test is very easily applied, as follows: From the tincture of guaiac the resin is precipitated by adding a few drops to four drachms of water. Divide this into two portions, and add to one a small quantity of an aqueous solution of the coloring matter of the blood, just enough to give it the faintest red tint, and to the other add a few drops of pure peroxide of hydrogen; there will be no change of color in the resin in either glass, *i. e.*, neither the blood nor the peroxide (antozone) will oxidize the guaiacum and turn it blue. If now to the first glass containing blood and resin a few drops of peroxide are added, the blue color begins to show itself in a minute or two just as if a liquid containing ozone (solution of permanganate of potash) had been added. If the resin is in excess, the blue color may be concealed so as not to show itself distinctly until several minutes have elapsed, and if the blood is in excess, the color produced will be of a dingy indigo or dirty violet. In all these cases, however, there is an easy method of bringing out the color. The oxidized resin is soluble in alcohol (retaining its color), so that it is only necessary to add enough alcohol to dissolve the resin, when the color will come out clearly. From experiments detailed by Professor Taylor, it is evident that this test when properly applied is marvellously delicate, almost rivalling the spectroscope. In a case where the blood had remained upon a piece of cloth for over ten years, leaving only a faint tinge, the presence of blood was readily demonstrated by moistening the spots with the two liquids, and then taking an impression upon white blotting-paper. It is of course absolutely essential that the antozone, whether it be ether or peroxide of hydrogen, should be perfectly pure and especially free from iron or lead, as a slight quantity of the persalts of these substances would invalidate the test. Ozonized ether

will yield almost as good results as peroxide of hydrogen, but Professor Taylor prefers the latter."

IV. EPIDEMIOLOGY.

The Fever in the Mauritius.

THROUGH the efforts of the London Epidemiological Society the character of this terrible scourge which recently more than decimated the inhabitants of Mauritius has been made known. We make some extracts from the Reports, as given in the London *Lancet*, for February, 1868:

"It has been commonly supposed that the so-called 'bilious-remittent' or 'Bombay fever,' presumed to be endemic in Mauritius was the malarious disease familiar in the Indian Peninsula. True bilious remittent fever is endemic in the marshy and malaria-breeding districts of Mauritius; but Dr. Barraut shows that the disease popularly known as the 'Bombay fever' is a contagious malady, which is developed under conditions precisely similar to those in which typhus occurs. This malady first appeared among, if it was not imported by, recently arrived detachments of coolies, as far back as 1808. The disease runs a certain course (fifteen and twenty-two days), is of continuous type, spreads unquestionably by contagion, as is shown by the manner of its dissemination in Indian camps, jails, and shops, and its introduction into Réunion; it prevails equally in the cold months (when malarious disease is less rife) as in the sultry, and is entirely unaffected in its course by quinine. The prevalence of this disease owed altogether different causes to those which determined the outbreak of pernicious fever. The latter malady was entirely new to the island. Dr. Barraut vividly described the telluric and climatic changes which had taken place of late years in Mauritius, and the aggravation of circumstances productive of malaria as a consequence,—particularly the gradual rise of the coral reefs, diminished scour of the tides, and consequent decreasing flushing of the pestiferous lagoons and embouchures of streams near inhabited districts. He showed, also, how a period of intense heat had given peculiar vigor to malarial emanations; and that this period had concurred with a time of commercial crisis, and high price of provisions, entailing much privation among the poor Indians.

"At the outset of 1867, the sources of malaria were more rife than they had been at any previous period in Mauritius; and the population was in a state less able than at any former time to resist the pernicious influence of paludal emanations. Under these conditions the outbreak occurred. Dr. Barraut, bearing well in mind Dr. Salisbury's researches on the connection of intermittent fever with certain species of palmellæ, made several observations on the subject. In the foggy air about marshy land and humid ground near Port Louis he discovered an immense variety of zoosporoid cells, animalcular bodies, algid cells, filaments and fungoids; but he did not find either these cells or the species of palmellæ described by Dr. Salisbury in the secretions or urine of patients affected with pernicious fever. Dr. Barraut, however, while stating this fact, does not wish too great importance to be attached to his necessarily somewhat limited and imperfect observations during the terrible pressure of the outbreak.

"Dr. Roger's paper was principally occupied with a description of the perni-

cious disease. He concludes (1) that it was of malarial origin ; (2) that it was infectious—a conclusion explained, doubtless, by Dr. Barraut's observations, and the coexistence of the typhous disease with the malarial ; (3) that the outbreak was occasioned primarily by the extensive denudation of land which had been going on for several years, and to a succession of droughts consequent on a marked decrease in the amount of rainfall ; (4) and secondarily to the inundation of 1865, the enormous increase of population in Port Louis of late years, and the abominable insanitary state of the town and native camps.

Infection and its Nature.

In the Schlesian Society for National Culture, in January last, Professor LEBERT read a valuable lecture on Infection, reported in the *All. Medical. Central Zeitung*, for March. He gave a brief sketch of those low organisms which are now believed by most scientific physicians to be the real cause of many diseases ; but he classified them not as most naturalists do with the lowest animals, but with the lowest plants. He related his own investigations on hospital gangrene, gangrene in scrofulous children, on dysentery and cholera, and dwelt especially on the disease of silk-worms and the small one-celled fungus, which, rapidly developing by segmentation, penetrates all parts of the body, changes the chemical constitution of the blood, so that it gives an alkaline reaction, and even forms visible swellings on the spinning-glands of the worm.

Those low forms of life known as bacteria and vibrios, are most frequently found in alkaline fluids. It has been demonstrated that in anthrax they are the chief element of infection. These bacteria and vibrios probably play an important part in small-pox, typhus, and gangrene. Blood containing them injected into a healthy animal rapidly produces a fatal result. The speaker called attention, however, to the very great difficulty of these researches, as these organic forms are always found wherever putrefaction or fermentation is present. Investigations must be made with the greatest caution, and only thoroughly boiled and carefully distilled water should be used in mounting the specimens for the microscope. Only a very high power of this instrument will display them, and their minute and varying forms are apt to deceive even the expert.

Algid Vegetations in Syphilis and Gonorrhœa.

In an article in the *American Journal of the Medical Sciences*, for January, 1868, Professor SALISBURY, of Ohio, details the discovery of specific forms of vegetable life in venereal diseases. He gives his results, as follows :

"The only thing found that seemed to be foreign to pus from other sores, was a small, highly refractive sporoid body, which subsequent discoveries demonstrated to be the spore of the *Crypta syphilitica*. In studying this minute form, I was led to dissect out the bed of chancres, and subject them to careful microscopic examination, when I soon discovered a peculiar filament, running in all directions, singly and in bundles, through and among the diseased connective-tissue elements. This organism was soon determined to be algoid. It was found in multitudes, in all stages of development, from the spore to the mature filament. Up to the present time, I have carefully worked up over one hundred cases in this way, dissecting out the base of the primary sore, and have uniformly found this

vegetation; and what is still more interesting, this same vegetation shows itself in the blood so soon as the disease becomes constitutional. Its presence or absence in the blood is believed to be a sure guide for continuing or discontinuing treatment.

"The filaments, as they occur in the blood, are more highly refractive, and have the peculiar obtusely rounded extremities, in a more marked degree, than those found in the beds of the primary sores. Both are, however, equally homogeneous throughout. The filaments in the blood are frequently found united at one end in bundles, while they radiate at the other in more or less rigid uniform curves. This vegetation has a peculiar tendency to develop in connective tissue, cartilage, and bone. When once planted in the organism, it has a tendency to remain either in a partially dormant or in an active state, till removed by remedial means. It seemingly may remain in the system, under certain conditions, for years, or a lifetime, without producing any serious trouble; or it may, if circumstances are present that favor its development, produce grave and continued disease and suffering. Under favorable states of the system, the tendency seems to be for the vegetation to gradually lessen; and probably, in some few instances, it may eventually entirely disappear. This vegetation may be transmitted from one individual to another, during the secondary and tertiary stages, under the proper conditions, without producing the primary disease. I have noticed many instances in which the father having had the disease previous to marriage and where the poison was not entirely eliminated, even though no outward manifestations of the disease had shown itself in him after marriage, this vegetation was transmitted to, and found in the blood of the wife and children many years after. In many cases of this kind, this vegetation produces no visible impression upon the systems to which it is transferred; while, upon others, it produces more or less marked constitutional disturbance."

Genus. *CRYPTA* (Salisbury).—Minute, transparent, highly refractive algoid filaments, which develop in living organic matter from spores.

Species. *C. syphilitica* (Salisbury).—A homogeneous filament, with extremities obtusely rounded. The filaments are of such uniform structure throughout that no trace of transverse markings are visible save in their early stage of development; neither can the contents be distinguished from the outside wall of the filament. The filaments are either straight, coiled, or arranged in curves. They develop from spores, which may be active or inactive in the connective tissue, and may be transplanted from one individual to another by inoculation, or by contact with mucous membranes. They are believed to produce the disease known as syphilis. The connective tissues in their various modifications, furnish a fertile soil for the development and propagation of this plant. When the spores are planted on a mucous surface, they vegetate, the filaments making their way through the basement-membrane, instead of extending laterally in the epithelial tissue. The epithelial tissue, in the primary disease, is only destroyed immediately over where the plants first penetrate the glue tissue beneath.

After having discovered the *Crypta syphilitica* in the beds of chancres, I was led to examine carefully the tissue invaded by gonorrhœa. Selecting such cases of the disease as had not been subjected to treatment, and where the discharge was copious and the inflammation severe, the patients were directed first to void their urine; the lips of the meatus were then separated, and with the clean edge of a small scalpel I scraped the epithelium from the orifice of the urethra, and

placed the scrapings between the slides of the microscope. The specimens thus obtained were each examined carefully, often for many hours together, watching the changes produced by gradual drying, and making accurate notes of all the abnormal bodies and appearances present. I had not pursued this mode of inquiry long, before I discovered the spores which I had previously found in the pus scattered about among and in the parent epithelial cells, and here and there found filaments, single and in little knots, in all stages of development. These filaments were soon discovered to emanate from the minute spores previously mentioned. In the embryonic filaments a moniliform structure could be observed, exhibiting the outlines of the individual spores, while the more advanced and mature filaments were usually homogeneous throughout their entire length.

From 1862 to the present time I have worked up carefully several hundred cases in this way, and have made careful drawings, with full notes. In all of these cases this peculiar vegetation has been found: in some cases, the spores only; in others, the spores and embryonic filaments; and in still others, the spores and filaments in all stages of development were found. Believing this plant to be the specific cause of gonorrhœa—not being able to find it in mucous membranes affected with other inflammatory derangements—I have given it the name *Crypta gonorrhœa*.

The spores are very minute and well defined. They are often discovered in twos and sometimes in fours undergoing the process of duplicative segmentation. They occur and develop rapidly, in gonorrhœa, in and among the parent cells of the mucous surfaces affected, producing great irritation and inflammation, and a rapid formation of *mucopus* cells, which often form around the spores, and thus become vehicles for eliminating the virus from the parent-cells. In this way nearly every particle of gonorrhœal discharge becomes loaded with the specific cause.

On the whole question of the fungoid origin of disease, it is but proper to state that there is a wide difference of opinion, some of the best, most cautious, and most skilful microscopists and physicians rejecting it nearly *in toto*. The *Brit. Med. Jour.* for May 23d, 1868, has the following remarks on Dr. Salisbury's views and alleged discoveries:

Dr. Salisbury has added thirty new varieties of vegetable parasites, which he describes as characteristic of particular conditions of the urinary, intestinal, and mucous secretions generally. Meantime, Dr. Gavin Milroy has obtained from the Rev. M. J. Berkeley, the most distinguished of British mycologists, answers to an elaborate series of questions on epiphytes in plants and epidemics of blights or epiphytes, hoping that they might throw some light upon our own observations of epidemic diseases of man. Dr. Milroy's questions are very carefully devised to cover the whole ground of telluric and atmospheric influence. The answers are too long to be quoted here, and we must refer our readers for them to the *Gardener's Chronicle and Agricultural Gazette* for May 2d and 9th, 1868. The following are perhaps the two most directly important points which are elucidated.

"13. Q. Have any particular epiphytes been observed to be frequently antecedent to, or coexistent with, epidemic diseases in men, or with murrains among the lower animals? Is there any published record or register of such coincidences? Also, has any inter-relation or mutual connection been observed between the occurrence of different epiphytic disease?—A. Ergot is the most prominent instance. It not unfrequently, where rye is extensively used, produces disease, and

I have reason to believe that, in years when it is prevalent in grass fields, cows and ewes are apt to slip their young. I believe that it sometimes produces gangrene in sheep. I do not believe in Hallier's views of the connection of cholera with parasites on rice. I am taking great pains to ascertain what are the rice-parasites. I believe Hallier's notions to be entirely theoretical. That some cutaneous disorders arise from fungi is pretty certain, but there is nothing to show that fevers, or other contagious or infectious diseases, arise from the same cause. It was supposed that diphtheria depended on a fungus; but I have examined diphtheria membranes, in which there was no fungus. No inter-relation between different epiphytic diseases has been observed, unless the connection between the æcidium of the berberry and wheat-mildew be considered as proved; but, even if this were the case, it merely shows that the same fungus may exhibit different phases under different circumstances, as is undoubtedly true in puccinia and aregma, not to mention other epiphytes.

"15. Q. What is, or what is believed to be, the pathology or visible morbid change which constitutes, or is at least always associated with, the best known epiphytic diseases? Has it been shown to be of the nature of an organic germ, or spore, or molecule? or is the subject still as occult and inscrutable to the vegetable physiologist as the originating cause of most epidemic diseases is to the physician?—A. In the bunt the whole process is traceable; the parasite obtains admission from without, and the spawn traverses the young plants. In plants impregnated by myself I have seen the stem as well as the grain affected; but I never saw this in the fields. The potato-murrain, again, is distinctly traceable in affected tubers, the threads seeming to have a power of decomposing the cell-walls so as to gain admission to the tissues very deeply. In some cases the effect of the presence of the parasite is to produce an hypertrophy of the tissues, in bunt an intensity in the color of the chlorophyll, or at least such an alteration of color that a practised eye will at once detect a bunted plant. In many cases, however, I doubt whether the best microscopes will always detect fungous spawn; and such investigations require great caution, as the junctures of the cell-walls are very deceptive."

Facility of Contagion.

The following is a striking example of the tenacity which marks the contagious principles of certain diseases. We take it from a letter to the *London Lancet* of April 11th. It should be a warning to all physicians how they allow the use of the clothing, etc., of infected patients.

"A few years ago I was requested to visit a domestic servant in a family, who was represented to have been ill for some days. Upon seeing the patient, I found her in an advanced stage of scarlet fever, with malignant symptoms of the worst type, from which she died in forty-eight hours after I first saw her. I gave directions for the exercise of the most vigilant care towards the purification of the room and its contents. I ordered that all linen articles should be boiled; that the bed should be removed into an empty barn, and kept there, exposed to the action of the atmosphere for a considerable time; that the blankets should be scoured; and that the walls of the room should be lime-whitened. All these directions were strictly carried out, with the exception of that with regard to the blankets, which was neglected, as the young and newly-married mistress objected to the conversion of new blankets into old ones by the process of scouring; hence they were put

away uncleansed in a wardrobe in a vacant room. *Fourteen months afterwards* this young housekeeper, expecting her first confinement, whilst providing a temporary bed in her room for the accommodation of her monthly nurse, took these identical blankets from their resting-place as a part of the covering for it. About a fortnight after making this provision, her labor not having come on in the interval, I was requested to visit her. I found her under scarlet fever of a most severe form; in four days parturition commenced, and she died from exhaustion in half an hour after the birth of her child.

"I believe that the germs, whatever their nature may be, of many infectious diseases, such as plague, small-pox, and scarlet fever especially, may be retained in a latent form in woollen textures for an indefinite period, unless proper measures are adopted for their destruction, as I have known several instances in which scarlet fever and small-pox have been propagated in a mode similar to the above after the lapse of considerable periods of time, although of shorter duration than the one I have instanced."

Sunflowers as Anti-Miasmatics.

From time to time the common sunflower, *Helianthus Annuus*, has been spoken of as a corrective of the miasmatic poison of lowlands. This observation was first made in this country, but has not received the general attention which it merits. Latterly it has attracted considerable notice in the Netherlands, and articles have appeared upon it in several of the Dutch journals. One of them by Dr. ALI COHEN, is referred to in the *Prager Vierteljahrschrift* for April. Dr. Cohen relates that a certain Mr. Van Alsten possessed a swampy tract on the Schelde, which was so unhealthy as to induce the government of Belgium to take official steps to remedy it. Mr. A. had suffered from the miasmatic fever three times, and was only cured by a change of air. He at last commenced raising sunflowers. He planted three or four groups of them about forty or fifty yards from his house in various directions on some poor spots of ground. They flourished astonishingly, raising large heavy flowers. They derive their nourishment more from the air than the soil. Ever since then—now some ten years since—he, and his family, including a number of laborers and visitors, have been entirely free from the fever. Those of his neighbors who have followed his example, enjoy a similar immunity, while those who have not suffer just as much as before from the periodical pest. The seeds of the sunflower yield a useful oil, and their stalks make a very fair fuel.

The Propagation of Cholera.

While by the investigations of the continental physicians the theory that the geological character of the soil has any visible influence on the spread of Asiatic cholera, or the violence of its manifestations, has been virtually overthrown, the more decided is the testimony in favor of its propagation to a large extent by water. To this it has been replied, "Why, then, does not this water, poisoned with choleraic matter, affect all who partake of it?" But this question, as is rightly urged in the *London Medical Times and Gazette*, April, 1868, misrepresents altogether the results of scientific investigation into the nature and quality of choleraic excreta, which are relied upon in support of the hypothesis of the propagation of cholera through the medium of water. Take, for example, the follow-

ing extract from a report lately published by Dr. LETHEBY on the cholera epidemic of 1866: .

"Observation, indeed, in every part of the world leads to the conclusion that they [the alvine discharges of the sick] are the sole agents in propagating the disease, but the exact element or *materies morbi* which is thus concerned in communicating it is not known. The researches of Dr. Parkes in this country, Dr. Thome of Cologne, Professor Klob of Vienna, and Professor Hallier of Jena, have shown that the alvine discharges of persons sick of cholera contain *myriads of low cryptogamic organisms of the nature of a minute microscopic fungus, which is capable of rapid growth and multiplication* within the human intestine, and which feeds on and destroys the mucous coat of the bowel. It would seem, too, from the experiments of Dr. Thiersch of Munich, and of Dr. Sanderson of London, on mice fed with paper saturated with choleraic matter, that the alvine discharges are *not infectious in their fresh condition, but that after the fourth day, and up perhaps to the eighteenth, they possess infectious power.*"

Dr. SNOW, the father of the water theory, also replied as follows:

"An objection that has repeatedly been made to the propagation of cholera through the medium of water is that every one who drinks of the water ought to have the disease at once. This objection arises from mistaking the department of science to which the communication of cholera belongs, and looking on it as a question of chemistry instead of one of natural history, as it undoubtedly is. It cannot be supposed that a morbid poison which has the property, under suitable circumstances, of reproducing its kind should be capable of being diluted indefinitely in water, like a chemical salt, and therefore it is not to be presumed that the cholera poison would be equally diffused through every particle of the water. *The eggs of the tape-worm must undoubtedly pass down the sewers into the Thames, but it by no means follows that everybody who drinks a glass of the water should swallow one of the eggs.* As regards the morbid matter of cholera, many other circumstances besides the quantity of it which is present in a river at different periods of the epidemic must influence the chances of its being swallowed, such as its remaining in a butt or other vessel till it is decomposed or devoured by animalcules, or its merely settling to the bottom and remaining there. In the case of the pump-well in Broad Street Golden Square, if the cholera poison was contained in the minute whitish flocculi visible on close inspection to the naked eye, some persons might drink of the water without taking any, as they soon settled to the bottom of the vessel."

V. ANIMAL AND VEGETABLE PARASITES.

Spores in the Blood in Gangrene.

In the *Centralblatt für die Medicinischen Wissenschaften* for March 14th, 1868, there is an article published by C. HUETER, giving an account of observations made on two cases of what he calls *gangræna diphtheritica*.

In the first case the disease was in the middle finger, originated in an irritation near the nail, and was proceeding rapidly, in spite of the application of lunar caustic

and the actual cantery, when its progress was arrested by amputation between the first and second phalanges.

The amputated portion was immediately placed under a glass cover, and two hours after the operation, it was examined with great care.

A piece of the rete mucosum, and of the tissue in the neighborhood of the periosteum were taken, both from parts inflamed, but not yet gangrenous. In both cases, besides pus-cells, etc., there was found a countless number of small round or oval dark bodies, most of them in very active motion. Similar bodies, which however were not in motion, were found inclosed in some of the cells of the epithelium.

In this case the blood was not examined, but in another case, where gangrene attacked an artificial nose, made ten days before, from the skin of the forehead, a drop of blood was taken from the finger, and immediately placed under the microscope. A number of bodies, of the same size and appearance as those described in the case of gangrene of the finger, were found, but only a few of them were in movement, and those not very active. A piece of aponeurotic tissue taken at the same time from the immediate neighborhood of the diphtheritic mass of the nose, contained these bodies in much greater number and much more active. In this last case the author's observations were participated in and confirmed by Langenbeck and several of his colleagues.

Vegetable Organisms in the Blood in Rubeola and Typhus Fever, etc.

ERNST HALLIER, of Jena, reports, in the *Centralblatt für die Medicinischen Wissenschaften*, for March 7th, 1868, the results of the examination of the blood, in a case of typhus fever; and of the examination of the blood and sputa, in a case of rubeola.

He placed some of the blood of the patient with rubeola under the microscope, and found spores.* He then placed some of it into a mixture of starch-paste with phosphate of ammonia, and there was developed the fungus called *mucor mucedo*, and that only. In the sputa of the same patient, spores in greater number were found, which when planted produced not only the *mucor-mucedo*, but also another fungus called *penicillium crustaceum*, the spores of which are always found in the saliva.

Spores were also found in the blood of the typhus fever patient; and when an opportunity was given them of developing, the *rhizopus nigricans* of Ehrenberg was developed, the spores of which are often found in rotten vegetables, in fecal substances, etc.

The greatest precautions were taken, in both these cases, to avoid the admission of spores from any other source.†

Mucor mucedo is found to be developed also from the mildew of grass and grain (*ustilago carbo*); and thus the observations of Salisbury are confirmed; as it is no longer strange that rubeola should be sometimes produced by decaying straw.

In addition to these experiments, Hallier, in more than a dozen cases of chicken-

* *Micrococcus* cells.

† The author has invented an apparatus for this express purpose, and described it in his work on Fermentation, Leipzig, 1867, Fig. 2.

pox, found the spores of *pleospora herbarum* in the pustules and sebaceous glands of the patient; in vaccine lymph he found the spores of *aspergillus glaucus*; and in cholera those of *urocystis oryzae*. This last he cultivated on rice plants, until the same fruit was produced as that which is sometimes found in the stools of cholera patients, and always found in the contents of their intestines after death.

Entozoa in Carbuncle.

The Paris correspondence of the *Leavenworth Medical Herald* for May, 1868, contains the following interesting item:

Dr. DAVAINÉ, in a paper on Carbuncle, states that the blood of an animal that had died of this disorder, was found to be filled with microscopic filiform animalcules, belonging to the *vibrio* or *bacterium* kind. This is not the first time such a fact has been ascertained; but the question is, whether the animalcules are the cause, or only the effect of the malady; or, again, whether their presence is a mere accident. From a series of experiments made in order to throw some light on the subject, Dr. Davainé concludes: 1. That the animalcules in question are constantly found in the blood of animals attacked with carbuncles. 2. These animalcules appear in the spleen, the liver, and blood *before* the symptoms of the disease make their appearance; and, 3. The blood of infected subjects ceases to be contagious as soon as the animalcules have disappeared.

Trichinae.

In a report on his microscopical examinations of pork, etc., published in *Virchow's Archiv*, Dr. BERKHAN, of Braunschweig, gives the results of examination of the muscles of persons, who, having been victims of trichinosis, had recovered. A piece of the biceps muscle was removed from a man who was infected eight and a half years previously. The trichinal capsules were easily discovered in the form of small white striæ. The trichinae were yet alive.

A man, trichinous since 1859, whose biceps had been examined once before, in 1865, permitted Dr. B. to remove a piece of his biceps, October, 1867. The capsules could be recognized through the fascia of the muscle. Under the microscope, the trichinae were readily observed through the capsular wall. No progress in calcification of the capsules had been made since the previous examination in 1865. Most of the trichinae, eight and one-third years old, were alive, about one-eighth part of them had died.

Diffusion of Trichinae.

Dr. T. S. COBOLD relates in the *Proceedings of the Linnæan Society*, vol. ix (quoted in the *New York Medical Gazette*), the results of his numerous experiments in feeding animals with trichinous flesh.

His results correspond very closely with those obtained by investigations on the continent. Thus, H. A. Pagenstecher and C. J. Fuchs found that ingested muscle trichinae acquired sexual maturity within the intestinal canal of birds; but they never found young trichinae in the muscles of birds, nor did they perceive any evidences of an attempt on the part of the escaped embryos to effect a wandering or active migration on their own account. So seven experiments performed by

the author on birds gave negative results. No trichinæ were found either in the muscles or in the intestinal canal. Not a few persons entertain the notion that trichinæ are liable to infest all kinds of warm-blooded and even also many kinds of cold-blooded animals, such as reptiles and fishes. Certain nematodes found in earthworms have been described as trichinæ, and consequently, pigs, and hedgehogs were said to become trichinous through eating the annelids. The minute flesh-worms (described by Bowman) from the muscle of the eel are not true trichinæ, any more than the somewhat similar parasites (*Myoryktes Weismanni*), which Eberth found to infest the muscles of the frog. The negative results obtained may therefore fairly be taken as positive in one sense, inasmuch as they help, with the aid of other experiences, to define the area of distribution legitimately assignable to *Trichina spiralis*. The author obtained positive results in dogs, cats, pig, guinea-pig, and hedgehog. Carnivorous mammals, and especially those which subsist on a mixed diet, appear to be most liable to entertain trichinæ; nevertheless it is quite possible to rear flesh-worms in herbivora. Pagenstecher and Fuchs succeeded in rearing muscle trichinæ in a calf, and they found three female intestinal trichinæ in a goat, but apparently no muscle flesh-worms, although twenty-seven days had elapsed since the first feeding with trichinized rabbit's flesh. In three sheep experimented on by the author no trace of trichinæ could be found. In their natural state it is clear that herbivorous mammals can seldom have an opportunity of infesting themselves, while the reverse is the case with swine, carnivorous mammals, and man. Other parasites, the common fluke, for instance, are limited to a larger or smaller number of hosts; while on the other hand, in not a few cases, the territory occupied is that of the body of a single species. The two most common cestodes liable to infest man have a very limited distribution, and the same is true of nematodes, *Oxyuris vermicularis* being confined, as far as is known, to man. The author adds that in England ordinary precautions will suffice to prevent the introduction of trichiniasis. English swine are almost entirely, if not absolutely, free from this disease, and not a single case of trichiniasis in the living human subject has been diagnosed in the United Kingdom. Some twenty or thirty cases have been discovered post-mortem, but it is most probable that all these individuals had contracted the disease by eating German sausage or other preparation of foreign meat.

Remarks on the Treatment of Trichinitis.

In the *Deutsche Klinik*, for May 23d, 1868, Dr. AUG. DYES concludes a series of valuable articles on this dangerous complaint by some useful practical observations. He prefers to call the disease caused by the trichinæ *trichinitis*, regarding it as a real inflammation of the muscular structure. If, he goes on to say, the trichinitis is to be classed among inflammatory diseases, two indications are to be observed in its treatment; (1) the expulsion or destruction of the trichinæ in the stomach and intestines; and, (2) the reduction of the inflammation of the muscles caused by the presence of these parasites in them. The first three patients suffering with trichinitis which he saw, he supposed had cholera, and gave them in consequence strong doses of chlorine water (aquæ chlor. 3 pts., aquæ destil. 1 pt.), and found all the symptoms rapidly disappear. Afterwards he tried the same means in fourteen well-marked cases of trichinal disease with complete success. Very soon after the exhibition of the chlorine the colicky pains, diarrhœa, and

nausea disappeared, and in a few days all the other symptoms. To achieve this result, however, full doses must be used. Those who have tried these means without avail, failed because they used dilutions which had no effect on the animals. The proper strength is aq. chlor. 3 pts.; aq. destil 1 pt., of which a teaspoonful should be given at the outset every two hours, and when the symptoms abate, every three or four hours. He even adds, that given in these doses chlorine-water will destroy the poisons of diphtheria, scarlatina, typhus, and cholera with almost equal certainty.

He is of opinion that the use of purgatives, such as calomel or castor oil, is at best negative, and may be positively injurious.

Prevalence of Tape-worm.

Dr. R. C. WARD, of Atlanta, Ga., speaks of the great increase of this parasite in the Southern States (*New Orleans Journal of Medicine*, January, 1868). He says:

The extraordinary prevalence of tape-worm since the war has been a subject of remark by the members of the medical profession in this vicinity.

During the years 1865 and 1866, no less than ten cases were reported to the Atlanta Medical Society, as having occurred in the county of Fulton. It is known that this unusual prevalence exists in other sections of Georgia, and this is probably the case also throughout a Southern States.

The writer, who had not seen a single case in a practice of nearly twenty years, previous to the late war, has treated no less than five cases in the last two years.

The cause of this extraordinary frequency of tape-worm at the present time is an interesting subject of inquiry.

He had most success with koo-soo, using the powder prepared by Grimault et Cie, of Paris, in half-ounce doses. He also employed alum in lard or milk, but though the patient did well as long as the remedy was continued, it failed to bring away the head of the worm. The writer adds:

Dr. John Brinton, M. A., London, recommends as superior to all other remedies for the ejection of the tænia, the following combination: R. Ext. eth. flic. maris ʒjss.; pulv. kamelæ, ʒij; mucilag. et syrup, q. s.; aquæ cinnamom. ad ʒiij. Mix. Half to be taken at bed-time, and half at two, A. M. He reports ten cases relieved of the worm on the first trial by a single dose of this mixture, no second dose being required. The remedy occasioned no unpleasant result beyond slight nausea in some cases, and required no purgative medicine to aid it.

We have recently seen an article taken from the *Gazette Médicale de Paris*, in which it is stated that "ether, in its direct absorption by the intestinal canal, administered in capsules or in syrup, will produce anæsthesia in the worm, which may be removed by a mild purgative. Dr. Lortel gave for this purpose twenty grammes of ether, followed in two hours by thirty grammes of castor oil." If this be true of ether, we opine it is due, not to its anæsthetic property merely, which would probably be too transient to allow two hours' time for the action of the purgative, but must depend upon a peculiar and distinct anthelmintic property by which the worm is effectually destroyed.

An Epidemic Verminous Affection.

Drs. CHESNEY and BROCK, of New Market, Mo., describe an epidemic verminous affection in that vicinity, in a communication to the *Leavenworth Med. Herald*, (March, 1868).

The ages of the patients were included between the limits of eighteen months and twelve years; though by far the larger number was below the age of the second dentition. The cases, with very limited exceptions, all exhibited the same symptoms, viz., persistent gastric irritability; excessive mental excitability, in most cases precluding the possibility of the physician making a satisfactory examination; dilated pupils; wakefulness; thirst; loss of appetite; little or no fever; pulse little or not at all accelerated; face pale, with, however, an occasional deep red or purplish-red flush of one or both cheeks; the body, face, hands and feet being at the same time cold; bowels usually confined, and but poorly susceptible to the action of cathartic medicines; the abdomen instead of being hard and tumid, was in all cases soft and retracted; urine normal in quantity, but so altered in quality as to stain of a deep yellowish-green color the linen of the patient; a short, dry cough was present in some cases, as was also a lax condition of the bowels, with bloody stools in two or three, though these latter symptoms caused no troublesome complications in their treatment.

In the advanced period of the worst cases—especially the three which proved fatal, decided symptoms of subacute meningitis ensued—throwing the head back, rolling it from side to side with a constant tendency to keep the hands to the head: morbid somnolence with *contracted pupils*; dark, dry, chapped lips; dry, but not black tongue; moaning, convulsions, and death.

The common round worm (*ascaris lumbricoides*) was passed by all these patients (by some of them in vast numbers), except one of the fatal cases, which, although it passed no worms, had the same symptoms and treatment as the others; the patient presenting no noticeable difference from the other cases, save in an abnormal development of the head over what is usual among children of his age. The other two fatal cases passed worms in great abundance, but had no symptoms not common to the cases which recovered, save the convulsions—none of those in whom convulsions occurred getting well.

The attack usually lasted about ten days, though some cases remained sick considerably beyond that period; the return to health being gradual and not marked by any special occurrence.

The treatment adopted for the expulsion of these parasites was santonine with submuriate of mercury, generally in combination with rhubarb or other slow cathartic.

These cases happened *not in the spring, summer, or early months of autumn*, a time which is supposed to exercise an influence over their production, but in the *driest and otherwise the healthiest winter* we remember to have seen; a time, indeed, at which we might reasonably have supposed the infantile population would have been exempt from a visitation of the kind.

CLINICAL MEDICINE.

I. GENERAL AND CONSTITUTIONAL DISEASES.

Hemorrhage from Waxy or Amyloid Degeneration.

T. GRAINGER STEWART, M.D., F.R.S.E., of Edinburgh (Pathologist and extra Physician to the Royal Infirmary; Physician to the Royal Hospital for Children; Lecturer on General Pathology), states, upon this subject in the *British and Foreign Medico-Chirurgical Review* for January, 1868, p. 201, for some years past he has noticed that hemorrhage from the stomach and intestine occurs in cases of waxy or amyloid degeneration, and that independently of ulceration of the mucous membrane. He has thus been led to look into the literature of the subject, and inquire among professional friends as to their observations. The results of these inquiries are the following: That hemorrhage has been observed accompanying the waxy degeneration in the *spleen*, in the *skin*, in *mucous* and *serous membranes*, in the *substance of muscles*, in the *mucous membranes of the intestines*, and perhaps in the *kidney*.

Among the illustrative examples are narrated the following:

M. A. J., æt. 30, was a wandering beggar, had had syphilis, and said that she did not remember ever to have been strong and healthy. She was admitted to the Royal Infirmary on January 21st, 1866. She had not menstruated for several years, and her weakness had been increasing up to the time of her admission. She complained of cough: The physical signs in the chest were not very distinct, but the symptoms of phthisis were well marked. The urine was rather copious, of sp. gr. 1014, of a light amber color, and contained much albumen, with a few finely granular tube-casts. She had much diarrhœa; the motions, at first watery, were ultimately of a black, tarry color; this was referred to the presence of blood in the fæces. She died exhausted on February 14th.

Autopsy.—The body was emaciated. There were traces of syphilitic ulcers in the vagina. Both *lungs* contained a considerable amount of tubercular (or perhaps syphilitic) deposit, little at base or apex, much in the middle part. The *pleuræ* were adherent. The *heart* was natural. The *liver* was large and waxy; both cells and vessels affected. It contained no syphilitic cicatrices or deposits. There were remnants of an hydatid cyst. The *spleen* was connected to neighboring organs by many fibrous adhesions. Its vessels, but not its Malpighian bodies, were waxy. The kidneys were in the third stage of the waxy degeneration. The *uterus* and bladder were natural. The *intestines* were extremely waxy. The epithelium remained firmly attached to the surface of the villi, was markedly translucent, and on the application of iodine assumed the characteristic reddish color. The small arteries were also waxy. The mucous membrane of the bowel was coated in many parts, both in the small and large intestines, with a layer of brownish-red matter,

which adhered in some parts loosely, in some firmly, to the surface, and which, though mostly on the free surface, was here and there to be seen within the membrane, particularly in the villi. This matter was ascertained in some parts to consist of altered blood, and nowhere did it exhibit any reaction with iodine. There was no ulcer, nor trace of ulceration in the bowel.

Commentary.—In this case there was, along with the symptoms of waxy kidney, a copious diarrhœa, at length distinctly bloody. At the post-mortem examination no explanation was found of the one or the other, excepting the waxy degeneration, while the traces of recent hemorrhage from the degenerated surface and in its substance were remarkably distinct.

T. B——, æt. 33, a carter, was admitted to the Royal Infirmary, under my own care, March 1st, 1867. He had been a man of intemperate habits, and affected with syphilis. About two months before admission had an attack of diarrhœa, which gradually subsided. From increasing weakness he was obliged to give up work in the middle of January.

On admission, he had considerable fever, passed large quantities of slightly albuminous urine, often tinged with bile. He frequently vomited coffee-ground matters, and had very severe diarrhœa, always of a black, tarry color, sometimes interspersed with blood, occasionally even clots; he had repeated attacks of aphthous ulceration of mouth and throat which yielded to treatment, but the hemorrhage and diarrhœa gradually wore him out, and he died exhausted, May 22d.

Autopsy.—The body was much emaciated. The heart was natural. The pleuræ were not adherent, but about the middle of the right there was some recent lymph. Throughout both there were nodules of various sizes, from that of a cherrystone to that of a walnut. They were about eight in number, and most abundant in the upper half, though not specially towards the apices. They were opaque and cheesy in the centre; exhibited no traces of softening. The margins were more translucent, and of a darker color. Microscopically they were found to consist of fatty and granular matter, with small cells or nuclei. The bronchi were natural. There was no peritonitis nor ascites. The liver was enlarged, and extremely waxy; it weighed 8 lbs. 11 oz. In the centre of the lobules there was a good deal of yellow pigment in the cells. The greater part of the lobule was waxy, and there was very little fatty degeneration. The spleen was enlarged; it weighed 1 lb. 6 oz. Its smaller arteries and Malpighian bodies were waxy. Into many of them hemorrhage had taken place. Throughout its substance there were further numerous white tubercle-like nodules, some single, smaller than a millet-seed, others compound, and forming masses of the size of a raisin. Successive stages were recognized, and the smaller were found to be formed by the deposit of whitish matter within the Malpighian bodies. This matter was composed of cells or nuclei similar to those seen in the lung. The kidneys were enlarged in the second stage of the waxy form of Bright's disease, with considerable fatty degeneration of the epithelium of some of the tubules. The stomach was waxy. The villi and arteries of the small intestine were also waxy. The large intestine contained slight traces of old ulcers, and was throughout in an extreme state of waxy degeneration. The upper part of the large and some portion of the small intestine were coated with a layer of reddish-brown or fawn-colored matter, which adhered at some parts firmly, at some loosely to the surface. The brain was somewhat atrophied, otherwise natural.

Commentary.—In this case the gastro-intestinal symptoms were very severe, but at the post-mortem examination no lesion of the tract was found, excepting

the advanced waxy degeneration. The recently effused blood forming a layer on the surface of the membrane showed that the hemorrhage had not taken place from any individual point, but from a great part of the tract at once. There were traces of old ulcers—but only traces—in no way fitted to account for the hemorrhage. One of the singular features of the case was the marked fever which existed throughout.

A. M—, a shoemaker, has been under my observation as a case of waxy liver, spleen, and kidneys, since 1859. He has at times been affected with diarrhoea and vomiting, occasionally bloody. The first time that such an attack occurred was in February, 1861. During the year which followed he occasionally passed by stool blood red and altered, and his bowels were very frequently loose. After a time these symptoms disappeared, but in 1864 I find a note that on several occasions he had intense diarrhoea, sometimes bloody, and that he vomited bloody matters. On September 22d, 1865, he was seized with vomiting of bile and clotted blood, and he passed black tarry matter by stool. Soon again his bowels became constipated, and his general health improved. When I last saw him he was considerably better, had not had hemorrhage from the bowels or stomach for many months.

"Commentary.—Of the existence of the waxy degeneration in this man there can be no doubt; but we cannot positively say that the intestinal tract has been affected. The diarrhoea and hemorrhage, however, so closely resembled that which occurred in association with that lesion in other cases, that it appears to me very reasonable, in the absence of evidence of any other cause, to ascribe it to this.

"The conclusions which seem warranted by the facts I have observed in connection with this subject are—

"1. That hemorrhage is not a very infrequent consequence of the waxy or amyloid degeneration of vessels.

"2. That, next to the spleen, the intestinal tract is the most common seat of such hemorrhage.

"3. That the hemorrhage occurs independently of any visible ulcerative process.

"4. That it probably depends upon rupture of the capillaries at the affected parts.

"5. That waxy or amyloid degeneration of the liver does not of itself suffice to induce hemorrhage from the bowels.

"6. That the hemorrhage occurs in cases in which the liver is free from waxy degeneration.

"7. That the occurrence of hemorrhage increases the danger of the patient. But,

"8. That sometimes it comes and goes for years without markedly depressing the vital powers.

"In regard to treatment, I may add that, so far as I have yet seen, the diarrhoea and hemorrhage appear to be better controlled by sedative and astringent enemas than by any other means."

Milk Sickness.

Dr. C. H. SMITH, of Kenton, Ohio, communicates to the *Boston Medical and Surgical Journal*, for January 9th, 1868, the following account of a local prevalence of Milk Sickness:

"We have had, for a short time, quite an endemic of this complaint, furnishing about fifty cases, of which seven died. The symptoms are, sudden and extreme prostration, nausea, prolonged vomiting, faintness; the temperature of the ex-

extremities and body falling much below the natural standard; and the skin often becoming clammy. Great distress and anxiety are depicted upon the countenance, the patient experiencing an undefined dread. He acquires a peculiar fetor, or a sweetish odor. The tongue is swollen, and, in fatal cases, becomes black with incrustation. The bowels become obstinately constipated, and a strong pulsation is felt over the whole abdomen, especially marked to the right of the umbilicus. The abdomen is caved in, and has the appearance of being empty. Cephalalgia and tinnitus aurium are common accompaniments. The heart and large arteries beat with violence, whilst the pulse at the wrist remains almost natural. The violent vomiting results in the ejection of a fluid of variable appearance. It is sometimes colorless, sometimes like soapsuds; and in other instances, of the color of indigo, and in the last stages of cases that terminate fatally it is dark-brown, with a dark-colored sediment. The disease runs its course in a few days.

"The treatment is simple,—a cathartic, tonics, quinine, stimulants, blisters over the stomach, liquid farinaceous diet. Opium is not to be used in the disease, as cases get worse under its employment.

"All cases that occurred here were in American families, there not being one in a German family. Now, the cows of the two classes run on the same ground, and the cattle of both die with the disease; yet I have never known a case to occur among the Germans. The reason is, I think, plain. The Americans use the milk just as it comes from the cow, and the Germans boil what they drink."

Two Cases of Exophthalmic Goitre—Graves' Disease.

CASE 1. In the *Cincinnati Medical Repertory* for April, 1868, Dr. W. W. DAWSON, Surgeon to the Commercial Hospital, Cincinnati, Ohio, reports the following case of Graves' disease, which presents all the most marked peculiarities of that affection.

Mrs. S., æt. 29, a native of Massachusetts; married ten years; three children, and three miscarriages. About three years ago she miscarried at the fourth month, and on the day following she got out of bed and walked a mile and a half, then took the street cars and rode several miles further. Before reaching home she noticed some swelling of the legs and of the thyroid gland. The former disappeared in a day or two, but the latter continued and steadily increased. There was no pain in the gland at the time, nor has there been since. She did not menstruate for five months; on one or two occasions in the interval there was a mere show, lasting but a few moments. About two weeks after the miscarriage, her husband noticed that both eyes were prominent, red, and painful—the latter two symptoms were, however, of short duration. The heart at this time became irregular; she had frequent attacks of palpitation from excitement or unusual exercise, and sometimes when she was in repose. When she was about 13 years of age, she was confined to her bed four weeks with palpitation of the heart and difficulty of breathing. She was a very fat child, inheriting obesity from her mother, at 14 years, weighing 295 lbs. She was placed under the care of physicians for the reduction of the adipose matter; but at her marriage, five years later, she still weighed 240 lbs. She miscarried with her first conception, and began losing flesh more rapidly, so that previous to the beginning of her present trouble she weighed but 148 lbs. A troublesome cough followed her attack when she was 13 years old, but she had no palpitation after that until it appeared as one of the pathological events of the disease from which she is now suffering. Present condition: Pulse

114; moderate in fulness and force; action of the heart violent but regular, except in paroxysms of palpitations, which occur frequently. Second sound absent; no prominence of, or unusual dulness over, the præcordial region; carotid pulsation very marked. Eyes are full, prominent and staring, giving to the countenance a peculiarly unpleasant expression; sight unaffected. The thyroid gland is enlarged, but this is more marked on the right than on the left side; it is very vascular—literally, a pulsating tumor. The rush of blood through the carotids and the enlarged and dilated vessels of the gland, impart a kind of pulsating thrill to the hand when applied to the surface—this thrill is singularly apparent in the isthmus. Menstruation normal, appetite capricious, bowels regular, weight 100 lbs., skin inclined to moisture, but of healthy hue. She has a bronchial cough, most troublesome at night; her voice is hoarse, and her breathing somewhat asthmatic. She cannot be said to be anæmic. Her strength is fair; she attends not only to her household duties, but works as a seamstress. At times she is nervous and irritable, but generally cheerful. In July, 1867, she miscarried. She says she has been gradually improving for the last two years.

It will be seen, as before stated, that this case not only presents, with great clearness, the three well-defined features of exophthalmic goitre, but, in its secondary symptoms, it also agrees very closely with most of the cases of this affection which have been published. *Amenorrhœa*, which, according to Trousseau, is the almost constant attendant upon this disease, was present in this case during the first five months; after that interval her menstruation has been regular, except when interrupted by pregnancy. *Emaciation* began years before the first appearance of the goitre, and has steadily advanced, so that now she weighs but a trifle over one-third of what she did at 14 years of age.

Anorexia and boulimia alternate with each other, at one time having an aversion to food, at another her appetite is voracious.

Irritability of temper, another concomitant secondary symptom, is strikingly shown in this woman. She is at times nervous, fretful, and provokingly exacting.

Anæmia, although present in most cases, is absent in this one. Prof. Teissier has reported four cases where the persons were well developed in blood and muscle.

The radial pulse ranges usually from 110 to 130, but does not partake of the commotion which characterizes the vessels at the root and sides of the neck; in our case the pulse is habitually 114, but has no other peculiarity.

Age and sex most liable to the disease.—Upon this Trousseau remarks, that "Graves' disease is pretty common in women, but it is relatively rare in men. Of fifty cases of this complaint collected by Withuizen, only eight occurred in males." From twenty to twenty-five years is the period in which the disease has usually manifested itself.

Treatment.—The remarks of Mr. Coote on the treatment of this affection are most judicious. I quote from him as follows: "The proper treatment is very definitely pointed out by the causes and symptoms of the disease. To remove these causes (if they still exist), which appear to have been important elements in the first production of the disease, as hemorrhage, over-exertion of mind or body, etc.; to allay the excessive action and irritability of the heart by digitalis, morphia, hyoscyamus, and similar drugs; to improve the impoverished or vitiated blood by tonics, especially iron; to place the patient in favorable conditions, so far as is possible, for good air and perfect rest, are obvious and most important general methods of treatment, the details of which must be decided separately for each

case. Iodine, whether taken internally or applied to the surface of the swollen thyroid gland, appears to be by itself of very little use. The application of ice appears, in some cases, to be very beneficial."

Surgical interference is still more hazardous in this than in the ordinary form of bronchocele, and would only be resorted to in cases of extreme danger from suffocation.

CASE 2. The following case of Graves' disease is reported in the *Boston Medical and Surgical Journal* for April 16th, 1868, as read before the Suffolk District Medical Society, January 25th, 1868, by F. J. KNIGHT, M.D.

A. S., a lithographic printer, 33 years of age, married, was born in Baden, and has been in America fifteen years. His father and mother, who had no disease resembling his own, had six children, two of whom died of diseases peculiar to females. One brother, who still lives in Germany, has a goitre; and another, in America, has developed cardiac disorder of some kind. The third brother has poor health. In youth, the patient was always strong, and had no serious sickness. He has always been nearsighted.

When 13 years of age, that is, twenty years ago, he began to notice some palpitation of the heart, and enlargement of the thyroid gland in its left lobe. He had experienced no fright, and knows of no particular cause for the trouble. These symptoms—the palpitation of the heart and the enlargement of the thyroid gland—have continued and gradually increased up to the present time, and the beating of the heart has sometimes been heard at a distance. He has never suffered much inconvenience from them till the past six months. He was accepted, and served several years in the army at home, and also served three months in the U. S. Army during the late war. He had some fevers, but never rheumatism or disease of the kidneys. He says that he has had a little cough for a long time. It is sometimes increased by taking cold. He has never had hæmoptysis. For six months past he has been failing; for he has lost much flesh and strength, and he has had an increase of cough, and considerable dyspnoea. For six weeks he has been unable to work.

On the 9th inst., he applied at the Dispensary, on account of palpitation of the heart; he complained, also, that for fourteen days he had been dizzy, and had had spots flitting before his eyes, and that his eyes burned when he looked steadily at any object. He complained also of irritability of temper, and sometimes numbness of hands, arms, and head. His face was thin, his cheeks flushed, and his eyes had a peculiar shining look. There was no appearance of anæmia, and no cedema. Irritation of the epidermis caused no remarkable phenomena. His pulse was weak, very rapid, and very irregular, so much so as to render an accurate count impossible. His respirations were 24 in the minute, and his temperature 100° F. in the axilla. His appetite was capricious, and thirst excessive. His bowels and urinary organs performed their functions well. His sexual power was unimpaired. His sleep had been disturbed for the six months previous.

Directing now our attention to the organs apparently most affected, we find the following peculiarities: No prominence of the præcordial region. The action of the heart much excited, and much increased on any exertion, bodily or mental. The apex is felt in the sixth intercostal space, half an inch to the left of the linea mammalis, and five inches to the left of the median line of the body. The area of cardiac dulness is found, by percussion, to be increased—the left border of the heart being ascertained to be about an inch outside the nipple. I had no oppor-

tunity of judging whether this area of cardiac dulness varies or not. There was increased pulsation in the carotid arteries. There was no jugular pulsation. There was no apparent expansion of the thyroid gland with the beat of the heart. There was some dilatation of the veins of the face, but not of the neck. On auscultation, there was no murmur over heart, thyroid gland, or vessels of the neck. The first sound at the apex was becoming valvular in character.

Through the kindness of Dr. Buckingham, I was able to obtain a good sphygmographic record of the pulse, which had nothing peculiar about it, but conveyed an idea of the irregularity of the heart's action.

The thyroid gland was considerably enlarged in its left lobe; the isthmus and right lobe were also somewhat affected. He naturally lay best on the left side. There was no modification of the voice. Examining now the eyes, we find no protrusion; no marked change in the eye on altering the position of the object looked at. Adaptation does not seem to cost an effort. There is no diplopia. There is no dilatation of the vessels of the conjunctiva. His pupils contract readily. There is no pain in the eyes; no strabismus. No change in the eyes has been noticed by his friends.

As oculists have noted changes in the retina in some cases of this affection, I requested Dr. Wadsworth, Ophthalmic Surgeon to the Dispensary, to make an ophthalmoscopic examination of this patient, which he did with the following result, as reported by himself: "The pupils were widely dilated by atropia, when seen. There was nothing else in the external appearance of the eyes to draw especial attention to them. Media clear. There was a small atrophic crescent at the outer side of the left optic papilla, with deposit of pigment at its outer edge. In the right, a slight, ill-defined crescent, with pigment irregularly deposited, and the outer line of the papilla irregular. The vessels in both were of normal size. No change in the region of the maculæ. Tension normal. In the right eye, myopia about $\frac{1}{8}$; in the left, $\frac{1}{2}$ —determined with the ophthalmoscope, and so, perhaps, not quite exact. The acuteness of vision, determined rather roughly in the absence of lenses and test-types, was about $\frac{1}{3}$ in either eye. The field of vision was normal. Nothing was observed which might not occur in a case of ordinary myopia."

Examination of the lungs showed possible tuberculosis; which detracts from the interest which might otherwise attach to some of the symptoms—that of temperature, for instance—especially when we bear in mind that this affection was considered by Trousseau to depend on a lesion of the sympathetic.

The case is interesting—

1st. As occurring in a man. Out of fifty cases collected by Withuisen, a Danish writer, quoted by Trousseau, only eight were male subjects.

2d. On account of the entire absence of exophthalmus. Although any one of the three symptoms may be absent, they are generally all found to a greater or less degree, especially when the disease has continued any length of time.

3d. From the fact that the *left* lobe of the thyroid was first, and has always been most affected. In the great majority of cases reported this has been true of the *right*.

4th. On account of the great irregularity of the heart's action. In most of the cases thus far reported, the action of the heart has been very rapid, beating 140 to 150 in the minute, but perfectly regular.

5th. There were no signs of anemia, which was formerly supposed to be the exciting cause of the disease.

Lastly. On account of the long duration of the disease before causing the patient any great amount of trouble.

It may be asked why this is not a case in which goitre and cardiac enlargement have occurred in the same individual, irrespective of each other, and not depending on a common lesion. In a few words, I would answer—

1st. That the two affections came on together.

2d. The thyroid has not attained the enormous size usual in simple goitre of so long standing, but has pursued the course common to Graves' disease.

3d. There is no evidence of valvular disease of the heart, on which the enlargement might depend, nor yet of any of those conditions of the system (except the one under consideration) which in comparatively rare cases do produce enlargement of the heart without valvular lesion.

On the 28th of March, 1868, Dr. Knight reported to the Society the details of a post-mortem, the patient having died very suddenly about 12 P.M., February 14th:

"The facts of his life worthy of note, additional to those already given, are that he improved under the syrup of the iodide of iron, and that his sexual desire became very strong.

"It is said by Trousseau that iodine does good in *exceptional* cases. As the iodine and iron became separated in the system in the last preparation used, it may have been the iron rather than the iodine which benefited him, as this has perhaps oftener been known to do good in such cases. Sexual power is said to be often impaired in this disease. What our patient's *power* may have been we do not know, but it is interesting to know that his sexual *desire* was so strong as to lead him to ask his discharge from the hospital."

On the 16th, a post-mortem examination was made by Dr. C. W. SWAN, Pathologist to the City Hospital. The cervical ganglia of the sympathetic were skilfully dissected by Dr. C. B. PORTER, Demonstrator of Anatomy at the Massachusetts Medical College. Dr. Swan made the following notes:

"Autopsy, 86 hours post-mortem. Body rapidly decomposing and offensive. Trunk considerably discolored, and cuticle desquamating. Rigor slight. Head not examined. *Thyroid gland* enlarged to the size of an average orange. This was mostly a unilocular cystic condition of the left lobe, the contents being thin, yellowish, serous fluid. The wall of the cavity was thinly and unevenly coated with ragged fibrine, with here and there a bit of hard, calcareous matter. All the rest was normal, rather deep flesh-red gland-tissue, showing nothing peculiar under the microscope, but in an amount showing decided though not extreme hypertrophy. One or two small cysts were found in the thicker portions of the gland.

"*Heart*.—Marked general dilatation. No valvular nor muscular disease. The organ was flabby from post-mortem change, and contained a few strings of coagula, with a moderate amount of dark, liquid blood.

"*Spleen*.—Much enlarged; its capsule firmly distended by almost pulpy contents.

"*Kidneys*.—Rather large, soft, and dark-colored, but not otherwise remarkable.

"*Lungs* showed no trace of tubercular or other disease.

"*Intestines* much distended by gases. Other organs not remarkable."

It is to be particularly noted that *no tubercular* disease was found, the possibility of which I said in my report of the case somewhat detracted from the interest which might otherwise attach to one of the symptoms, viz., the elevation of temperature.

A very careful microscopical examination of the *cervical ganglia* of the *sympathetic* was made by Dr. S. G. WEBBER, who thus reports :

"The ganglia was put in glycerine, and after several days, examined. The *left* lower ganglion was broader than the right. The nerve-fibres were diminished in number and size in proportion to the amount of connective tissue in the *left* lower ganglion as compared with the right. The *left* lower ganglion also showed a deficiency of nerve-cells. They were also much smaller in size than in any of the other ganglia. They were not so strongly pigmented as on the right side, hence many may have escaped notice. The cells of the middle and upper ganglia on the left side were rather smaller than those in the corresponding ganglia on the right side, but the difference was not so marked as in the lower ganglia. In most of the sections from all the ganglia were masses of pigment apparently without cell-walls. No fat-globules were seen anywhere. The nerve-fibres from the *left* sympathetic, just above the middle cervical ganglion, were in many instances less than .0001 inch broad ; some were larger. On the right side, many were .0002 inch ; a very few only were so small as .0001, most being between .0001 and .0002 inch."

The mean of the measurement of the cells of the several ganglia of the two sides was as follows :

	Left.	Right.
Upper,	.00116 by .00084	.00122 by .00097
Middle,	.00103 by .00080	.00124 by .00091
Lower,	.00086 by .00062	.00140 by .00101

It is worthy of note that Dr. Webber commenced the examination supposing that the right lobe of the thyroid had been chiefly affected, and that the changes in the nervous system, if any were found, would be most marked on the right side. It was only after obtaining the above results that he felt convinced that the reverse must have been the case, in which it gave me pleasure to confirm him. These results accord generally with those obtained in a case reported by Trousseau, in which was found a "predominance of connective tissue, and a diminution of the nervous elements." The inferences of Trousseau I will transcribe in brief :

"Exophthalmic goitre is, in my opinion, a neurosis of the sympathetic, if not a complaint attended with a material lesion of the ganglionic nervous system. This neurosis gives rise to local congestions, the proximate cause of which is a modification of the vaso-motor apparatus.

"In the language of the German school, hyperæmia may lead to exudation of a plasma, in which the elements of cellular tissue get developed; namely, nuclei, fusiform cells and fibres; there is proliferation of the connective tissue, and then one of two things may happen,—either the proliferation goes on and the connective tissue becomes changed into fibrous tissue, which from its exuberant growth, as much as from the contractile force with which it is endowed, determines constriction of the parenchyma; or it undergoes retrograde changes, becomes infiltrated with fat-globules, and finally converted into adipose tissue. In the former case, cirrhosis is the result; in the second, fatty degeneration."

Pancreatine in Phthisis pulmonalis.

In the *British Medical Journal* for February 8th, 1868, there is a letter from Dr. HORACE DOBELL in which he gives an account of a case under his care, where there was softening of the upper part of one lung and partial consolidation of the other, and in which great improvement took place under the use of pancreatic emulsion and pancreatine. While the first of these substances was used in connection with cod-liver oil and good diet, the patient did not gain as much as when the pancreatine was used. This last not only caused him to increase over 12 pounds in weight in a very short time, but enabled him to digest perfectly the cod-liver oil, which previously had not been digested well. The total increase in weight from July, 1866, until January, 1868, was 15 pounds, or from 119 to 134 pounds.

Dr. Dobell states that he has seen several other cases of improvement under this treatment, but none so well marked.

Recovery of a Man struck by Lightning.

Dr. DRESCHER, of Reinerz, reports in the *Allgemeine Medicinische Central-Zeitung*, for January 22d, 1868, a case in which very singular markings were produced on the body by lightning.

The man was sitting with his back against a wall. When struck he sank unconscious to the ground, and seven minutes afterwards, when first seen by Dr. Drescher, he had ceased breathing entirely, and his pulse was almost imperceptible. The skin was cold, the countenance pale, the eyes half closed, and the mouth open. Frictions were made on the face, neck, breast, and back; and a vein was opened, from which blood flowed, although at first very slowly. The first obvious respiration was now made, and gradually the skin became warmer, and color returned to the face. Half an hour after the accident, the patient began to moan, and at the end of an hour he had fully recovered consciousness, but was unable to swallow or to speak above his breath for half an hour more.

He now began to suffer the most violent pains, accompanied by intermittent convulsive movements in the flexors of the extremities. These gradually, in the course of an hour, fixed themselves in the forearms, and wrung from the patient loud screams. He described the feeling to be as if his arms were being torn off at the elbow. These pains were worse first in one arm and then in the other, but finally fixed themselves in the left arm, became endurable, and at last ceased almost entirely after about thirty-six hours, leaving, however, the general sensibility of the skin diminished.

During eight years before, the patient had at intervals suffered from an obstinate intermittent fever, from which, however, he had been for a long time entirely free; but eight hours after having been struck by lightning, he had a regular attack, which was repeated two days afterward, at which time the pains in the forearm returned with considerable violence.

Quinia, morphia and wine were the principal medicines given.

The marks on the body began at the first cervical vertebra, from which they spread in four directions. Two branches passed around the neck, one on one side and the other on the other, gave off branches on each shoulder, and then spread themselves all over the thorax; two other branches went over the scapulae towards the axillae.

All the lesser branches had a downward and outward direction. The color was a coppery brown, which from time to time changed to one a little lighter.

From the sacrum another line, an inch wide, ascended. It had the same color as the descending one, and branched off similarly; the branches of the two meeting on the back just below the scapulae, and on the abdomen above the umbilicus.

FIG. 11.



FIG. 12.



On the extremities there were only rudimentary indications of markings, which were a little more evident on the left arm than elsewhere.

The separate points shown in the engravings were as clear as if the patient had been tattooed.

All the markings disappeared within thirty-six hours.

The Relation of Grave Cerebral Symptoms to the Temperature of the body in Pneumonia,

Is made the subject of a paper by Dr. O. O. HEINZE, in the *Arch. f. Heilkunde*. His observations are based upon the material furnished by 317 cases of acute croupy pneumonia, which occurred from 1860 to 1867, in Prof. Wunderlich's wards at the Jacob's Hospital in Leipzig.

Of these 317 cases, 98 presented serious disturbances of the nervous system, such as various forms of delirium, hallucinations, unconscious movements, sopor, etc. In 67 cases of the 98 these symptoms occurred after the fever had passed its climax and when the temperature was descending and lowered; in 31 cases only they occurred while fever and temperature were high. Hence the author does not coincide with the opinion recently advanced by Liebermeister, that cerebral symptoms in pneumonia correspond to the elevation of temperature.

II. DISEASES OF THE BRAIN AND NERVOUS SYSTEM.

Chorea, Fatal and Non-Fatal Cases.

Dr. JOHN W. OGLE, Physician and Lecturer on Pathology, St. George's Hospital, contributes to the *Brit. and For. Med.-Chir. Review*, for January, 1868, p. 208, a valuable paper on Chorea Sancti Viti, including the History, Course and Termination of Sixteen Fatal Cases, and also certain details of out-patient and other cases which were not fatal.

Reviewing these sixteen fatal cases certain points are suggested by their consideration.

First of all as regards the *sex* of these cases. It is generally acknowledged that chorea much more affects the female than the male sex. Among the detailed fatal cases this preponderance in favor of the female sex is remarkable, inasmuch as, out of sixteen cases, there are no less than fourteen females.

As to *age*, these fatal cases occurred in individuals presenting on an average a greater advance of life than is generally given for all cases, including fatal and non-fatal. Out of the sixteen only two were under the age of ten (*viz.*, 7 and 10 years respectively), whilst three were of the age of 20 and upwards, the rest being intermediate (two, 11; one, 12; two, 15; one, 16; three, 17; and one 19).

As regards the *length of time* during which the patient had suffered from the affection before it proved fatal, the period was on the whole a short one. In two it was six or seven months; in two others, three months; in another, six weeks; in another, nine weeks; in two others, three weeks; in one, two weeks; in three, ten days, and in one only eight days.

As regards the fact of the patients having suffered from *previous attacks* of chorea or not, in only three cases is there mention of this.

Respecting so-called important *complications* of the affection, in two cases headache and drowsiness had been suffered; in one epileptic convulsions; in one chorea and convulsions followed an attack of scarlet fever, in two hysteria-like symptoms, in one delirium, and in two (one a married woman aged 20, the other aged 15), mania existed.

As regards the *secondary affections* which supervened in these fatal cases, in two instances so-termed phlegmonous or erysipelatous inflammation existed. In one of these there was empyema also.

Again, as regards *mental emotion* or *alarm* being influential in exciting or determining the choreic state, out of the sixteen cases there are eight in which fright or other emotion was supposed to have contributed to its production; in others it was either denied or not ascertained to have occurred. Some observers are inclined to protest against the idea that fright is nearly so adequate a cause of this affection as is generally imagined, but there can be no doubt of this being frequently the case, and almost every author who writes on the subject supports the supposition by authentic cases. Dr. Bright quotes a positive case of this kind. A child aged 9, having got well of an attack of chorea, was sleeping with his father, the father had an attack of apoplexy, which so frightened the child that "*from that time the chorea returned.*" Mayo in his "*Outlines of Human Physiology*," p. 170, relates the case of a woman who during pregnancy was greatly frightened; the alarm induced chorea in the fœtus. The child grew up, but always remained choreic.

As respects the history of *rheumatism* or rheumatic symptoms having existed, it is mentioned doubtfully in two cases, but decidedly in four, in one of which the rheumatic symptoms came on during the absence of the catamenia. Presumably also in four other cases rheumatism may have existed, as after death it was found that cardiac affection existed. Romberg, a high authority on all nervous diseases, says that the rheumatic disposition was rarely traceable in the cases which he had observed. He, however, noted cases of chorea as being greatly affected by climate and weather, being always worse in winter; and mentions that the disease occurs more frequently in the southern than the northern climates. Peacock found that in 14 cases of chorea rheumatic or cardiac symptoms had existed in 5, but states that this proportion is probably too large. Trousseau says that of all predisposing

pathological states, rheumatism is the most marked and the least questionable, and one of the most recent French writers looks upon chorea as a manifestation in the rheumatic diathesis.

As regards the *pathological anatomy* presented by these various fatal cases, there was found congestion, more or less complete, of the nervous centres (brain or spinal cord, or both) in six, whilst in one there was actual softening of the spinal cord, and in another the spinal cord was otherwise affected. In one there was softening of certain parts of the brain. In five cases there was proofs of congestion and other graver lesions of the genital systems; and in two pregnancy existed. In one the peritoneum was greatly congested.

Coming now to the state of the *Héart*, it was found that out of these sixteen cases in no less than ten cases there existed more or less fibrinous deposit or granulations upon some portion of the heart's valves or lining membrane. In one old pericarditis existed, and in another there was decided evidence of recent pericarditis having existed.

The following notes of an interesting case of chorea, successfully treated by the oil of male fern, is given by Dr. Ogle. It illustrates well quick recovery under the use of remedies:

"Ellen L——, æt. 9, residing in Pimlico, was first seen by me on 29th September, 1863. She was evidently suffering from acute chorea; had had no sleep for four days and nights; there was constant irregular spasmodic action of the whole body and face; she was never still for a moment (continually working). A bed-sore had formed over the sacrum the size of the palm of the hand, and the elbows were much chafed. She from time to time uttered a feeble whine, and wore a pitiable look of distress; her consciousness was perfect. The tongue was dry and brown, and sordes had accumulated on the lips. The pulse was exceedingly rapid and feeble. The pupils were moderately dilated. She had taken no nourishment, except a little wine and beef-tea, for some days. She seemed rapidly sinking. The mother told me she had been in the habit of passing portions of tape-worm for the last three months, and that large pieces had come away while under treatment; she had never seen the head. I saw by the patient's letter that scammony and calomel had been the medicine used. Thinking all these nervous symptoms might proceed from the intestinal irritation, I resolved to try a full dose of male fern. The mother was at first unwilling to have any change made in the medicine (morphia) which had last been prescribed, thinking the case hopeless, but at length yielded. I prescribed *Ol. Filicis Maris* ʒj, et *Mistura Acaciæ* ʒiiss, to be taken immediately, and to be followed in six hours by *Ol. Ricini* ʒss.

"On visiting her the following morning, I found the child asleep, quite free from any convulsive movement. The mother told me the draught had acted freely four hours after taking, that the child turned very pale and faint, and she thought she was dying. She however gave her some wine, which revived her, and in the course of a few minutes she was fast asleep and quite quiet, with the exception of occasional twitching. She slept for two hours; on waking she took some beef tea, and then slept again. When she awoke the convulsive movements commenced again, though in a greatly mitigated degree. About seven yards of tape-worm were collected, and the head with the four suckorial discs found. The castor oil had not been given.

"The subsequent history is simple. She continued to improve daily, the mouth and lips cleaning. The bed-sore gradually healed under the use of nitric acid

lotion. In a few days all convulsive movements had ceased, and in ten days she was able to leave her bed. The medicine prescribed was bark and ammonia, generous diet, and a little wine at first. On the 16th of September I took my leave of her, she having been able on the previous day to leave the house. During her convalescence I examined her heart several times, and always found a distinct mitral murmur.

"I have lately seen her mother, and she tells me her daughter has enjoyed good health ever since, and has seen no more tape-worms."

In the *Brit. and For. Med. Chirurg. Review*, for April, 1868, Dr. Ogle tabulates eighty cases of non-fatal chorea.

In these non-fatal cases the females are also in the majority (as they were in the fatal cases), being in the proportion of sixty-one of this sex to nineteen of males, i. e., rather more than three to one—a proportion which strongly suggests there are circumstances in their case which render them especially prone to the affection.

As respects *age*, out of the eighty cases all, excepting fourteen, were under the age of sixteen. Eleven is the age in which the greatest number were affected, viz., thirteen. Up to this age the numbers increase pretty uniformly from the age of eight and decrease to the age of fifteen. The youngest was five years of age, and that was the only instance under the age of six. The only two cases above the age of twenty-one, were twenty-four and forty-three years old respectively. Thus it is very clear that the circumstances of age, as well as of sex, have marked influence in connection with this affection.

As respects the *parts affected*, it does not appear that one side was more decidedly affected than the other. In one or two cases the movements appear to have changed from one side to another.

As to the apparent *causes* of the choreic affection, out of the eighty cases, in ten no mention is made of any causation whatever. In thirty-five it is recorded that no cause of any kind was suspected by friends. *Fright or mental emotion* is assigned as the cause in only five cases. In another case it is said to have aggravated the existing affection. In an additional case, fright and quarrel following rheumatic fever, which had existed three months before, were assigned causes; and in six more cases fright, and the presence of the common ascarides or of lumbrici combined, were thought to have been influential in producing it. As respects the presence of *intestinal worms*, in addition to the case above alluded to, eight were said to have worms at the time of commencement of treatment, and three had formerly had them.

As respects *rheumatism or rheumatic fever or cardiac affection*, in connection with the disease, it appears that in eight cases rheumatic fever had existed. In one of these no mention of the state of the heart's valves has been recorded, whilst in five cases it is stated the cardiac sounds were natural, and in one only were the cardiac sounds interfered with, there being slight obscuration of the second sound. In two cases a systolic bruit existed at the base of the heart, but in both it was affirmed that no rheumatic fever had occurred. In one a systolic bruit at the apex of the heart occurred, but there had been no rheumatic attack.

Dr. Chambers found that out of thirty-three cases of chorea in his book (*Renewal of Life*, p. 405), in six the affection either began during rheumatic fever or followed immediately after it, or the rheumatic fever succeeded to the chorea. Only one of the six cases had any cardiac affection. In the statistics of the London Hospital for 1864 (*Hospital Reports*, p. 388) it is stated that out of twenty-four

cases of chorea twenty had a systolic bruit at the apex of the heart, persistent in all but two; and in the statistics for 1865 (*Reports*, p. 422) it is said that out of thirty-seven cases, 15, or 40½ per cent., had valvular disease of the heart.

As regards *derangements of the uterine system*, in one case out of the eighty the attack followed a miscarriage, and in five cases it is stated that the catamenia had been scanty and irregular, or over-abundant and too persistent.

Looking at alleged causes of miscellaneous character, in two cases the mothers of the patients had had chorea, and in one a sister had had it, possibly from imitation. Authors recognize the *hereditary* character of chorea in some, though rare cases. Bright mentions it in p. 409 of his work, and See says he has found the disease to be hereditary in very many cases. They also allow that *imitation* may be, in certain instances, instrumental in its propagation. Chambers records such a case.

As respects the fact of the patient's having had *previous attacks* or otherwise, it is stated (excluding thirty-three cases in which no mention of this has been placed on record, and one in which it is doubtful) that in nineteen cases there were no previous choreic attacks, against twenty-five in which previous ones *had* occurred, and out of these, five had suffered from two previous attacks. In one case the patient had had chorea every year for seven years, lasting from September to Christmas. In several instances the attacks had been of long standing. In one they had been coming on for four years; in another the symptoms had existed off and on for eighteen years; and in a third for six years. In none of these long-standing cases were there any indications of cerebral or spinal lesion.

As regards *peculiarity in the symptoms*, in only two cases is there any mention of mental complication. In two cases the patients had been more or less liable to hysterical attacks; it will be remembered that in two of the fatal cases hysteria had co-existed. Dr. Chambers also records a case of chorea in which hysterical attacks had occurred.

Regarding *paralytic symptoms*, in eleven cases there is distinct mention of paralysis of some kind or other. In two positive *anæsthesia* existed.

Looking at the condition of the *pupils of the eyes*, in many cases dilatation of both pupils existed, as is commonly noticed by observers of chorea. In five cases *disparity* between the two pupils is noted, and in all these instances it is curious that it was the *right* pupil which was dilated more than the left.

Respecting *pain* experienced (excluding that which may be looked upon as rheumatic), in five cases there was distinct pain in the head, and in one "much spinal tenderness."

Regarding acknowledged *affections of vision*, such seem to have existed in three cases, in which dimness of sight was complained of.

As respects any connection between the affection and *sleep*, in three cases it was noted the choreic symptoms were wont to continue during sleep. In one the eyes would "twitch much" during sleep, and in another the patient was said to be "always worse in bed when first aroused from sleep."

One case exhibited a tendency to *retention* of urine, which sometimes lasted for twenty-four hours. Dr. Chambers mentions in his *Lectures*, p. 860, the case of a boy, aged nine, with chorea, who was unable to retain his feces or urine, and Trousseau alludes to cases of relaxation of the sphincters of the rectum and bladder.

In one case foaming at the mouth was described as existing; and in another a liability to choking whilst eating.

After detailing a number of cases of anomalous chorea, Dr. Ogle closes his very full and valuable communication as follows :

Thinking it might be interesting to search out what might have been the number of deaths from chorea, returned and registered as having occurred in England and Wales during a series of years, I found that from the year 1839, the first year of our present national plan of registration, they were as follows :

Deaths from Chorea.		Deaths from Chorea.		Deaths from Chorea.	
1839	54	1851	77	1859	55
1840	25	1852	73	1860	66
1841	28	1853	67	1861	71
1842	19	1854	48	1862	52
1847	39	1855	69	1863	63
1848	38	1856	59	1864	73
1849	34	1857	44	1865	88
1850	60	1858	53		

The number of deaths in the various years is very unequal ; it would be interesting to try and find out if this difference could fairly be attributable to any peculiar atmospheric or climatic cause. Many authors (this is mentioned by Bond) have found chorea to prevail much more in cold weather and winter than in summer, and certain observers practising in tropical climates have never met with it. Others again, as quoted by Dr. T. Thompson (*op. cit.*), consider it to be more common in summer.

Case of Aphasia.

Dr. V. V. ADAMSON, of Holton, Kansas, records in the *Leavenworth, Kansas, Medical Herald*, for May, 1868, the following case :

" Was called, on the morning of October 13th, 1867, to see a Mr. Joseph S., aged about thirty-two years ; found him a stout able-bodied German, of marked nervobillious temperament ; is a farmer by profession, and has never suffered from any serious illness heretofore ; his ancestors have, as a rule, been healthy and subject to no hereditary disease ; yet a brother and one of his parents died of a disease simulating tuberculosis.

" The symptoms presenting were as follows : Skin moist and of natural temperature, except over the left occipito-temporal region, and extending as far forward as the median line of the superciliary ridge : it was here a few degrees above the healthy standard ; tongue coated with a heavy brown fur, except the tip ; bowels very much constipated ; pulse fifty-two, full, soft and compressible ; respiration slow and principally abdominal ; eyes injected ; pupils active under the stimulus of light ; hearing dull ; complains of intense pain in the region of the middle lobe of left hemisphere of cerebrum, is slightly comatose, and unable to answer questions in a satisfactory manner.

" From his wife, I learned that for the last three weeks he had been suffering from a mild form of intermittent fever, of the quotidian type, yet he had continued to labor hard each day, in a stone quarry near by, until three days previous to my seeing him ; was attacked with severe intercranial pain whilst lifting a heavy stone ; this at once sent him to the house and to bed, and from that time to the present he had suffered from this hard headache, and that it was greatly aggravated each afternoon."

14th, A.M. Cephalalgia continues and is almost unendurable; hearing slightly improved; well-marked aphasia has now presented itself, he being unable to communicate his ideas either orally or written. Sulphate of quinia and morphia ordered.

15th, A.M. Less pain; pulse 50 and stronger; paralysis of left genio-hyo-glossus. Iodide of potassium added to quinia and morphia.

16th, A.M. Improving. Quininism apparent; strychnia substituted.

19th, A.M. Cephalalgia, paralysis, and aphasia continue as when last described. I should have mentioned that anorexia had been present from the beginning. The iodide having produced irritability of the bowels, diminish the quantity given to grs. v every six hours. He is losing strength.

20th, M. Continues to fail. Continue treatment.

21st. Failing. 22d. Finding him still going down, discontinue strychnia and resume quinia, grs. v, every two hours, with morphia sufficient to control the intense pain.

23d. Bears quinia well; evidently improving; pulse sixty and regular; has slept some; tongue cleaning and moist.

24th. Appetite returning; tongue still cleaning; intellect clearing up; is fully quinized; strength improving. Continue treatment.

25th. Tongue clean; bowels regular; paralysis of tongue has disappeared; calls frequently for something to eat (by signs). Continue treatment.

26th. Complains of but slight pain in his head; aphasia growing less; in every other way he is rapidly improving. No change in the treatment.

27th. Find him up and about the house; no cephalalgia whatever; has been trying to read the news, but gave me to understand that it confused his ideas, he could not comprehend what he read; forbid any further attempt at reading for the time being; withhold morphia; continue quinia and the iodide.

30th. Has greatly improved except in speech; is now perfectly rational upon all subjects; is beginning to count the cost of his sickness; gave me to understand, that he considered himself well, or would be, if he could only talk, or write, so as to be fully understood, and that from this time on I could treat him by prescribing at the office, and save him the expense of frequent professional visits. Withdraw all remedies, save tonic portions of quinia-three times a day; discharge him, with instructions to report in person once or twice a week.

Nov. 3d. Was summoned in hot haste to see Mr. S., whom the messenger reports dead, or dying. On my arrival find him just coming out of a congestive chill; attendants have used stimulants, both internally and externally, with good effect; resume the inevitable quinia in full doses, with the addition of pulv. caps. off.; push it to complete quinism, which I keep up for some days. From this time on he continued to improve, and at the present time (Feb. 11th, 1868), he is conducting the affairs of his farm; the aphasia in part remaining. The most of the time it is impossible for him to call to mind proper names; he cannot tell the name of his horses that he is driving every day, his wife's or even his own name. Yet he continues with true German tenacity to chase the almighty dollar. During the latter part of November, and through the months of December and January, Mr. S., was without medication, yet his aphasia diminished in the same ratio, as compared with the time he was kept under the influence of remedies. At present he is taking bromide of potassium, grs. xxv, three times a day.

QUERY.—Was this a case of aphasia from structural lesion? If so, what was

the nature of that lesion? It could not have been emboli, for there was no anæmia; no rheumatic diathesis, and no disease of the heart or arteries, could be detected. Broca, Huguins Jackson, and the Daxes, would tell us there was lesion of structure of the third convolution of the left anterior lobe of the cerebrum. Receiving their pathology as correct, is it not reasonable to suppose that there was rupture of an arterial branch, which resulted in the formation of a clot; and that we have the aphasia disappearing as the clot is absorbed? Or could it be that there was no lesion of structure whatever, but only one of function, having as its prime cause malarial poison, hence the regular exacerbations, the urgent demand for antiperiodics, making it a necessity to keep the patient fully quininized; and might not this excessive quininism account for the aphasia remaining, as at present it seems to be from loss of memory? There are many respectable practitioners who hold that, if this remedy is pushed to excess, it will produce such an effect upon the mind.

Impairment of the Power of Intelligent Language, in connection with Disease of the Nervous System.

Dr. JOHN W. OGLE, F.R.C.P., Physician to St. George's Hospital, writes upon this subject as follows, to the *London Lancet*, for March 21st, 1868:

Although much has of late been advanced by various authors, both English and foreign, which gives support to the supposition that the power of using articulate language is not only more immediately connected with the *left* cerebral hemisphere, but even specially linked to one (comparatively small) portion thereof; yet so many exceptional cases have been noted, of which the teaching fails to corroborate or even to aid the above supposition, that it must be considered, I think, doubtful to what extent we are justified in regarding integrity of intelligent expression as positively and invariably dependent upon (or, so to say, synonymous with) integrity of this particular locality of the brain.

I cannot but think it desirable that, for a fuller understanding of the matter, not only should new observations be made, but also that, as much as possible, all cases in which defects of language, spoken or written, or other modes or symbols of expression, however slight and apparently insignificant, should be collated, studied, and criticized at greater or less length. The recent trial which has occurred in the Probate Court (*Peacock v. Lowe*) shows also how necessary it is that we should study this subject with reference to impairment of the intellect or other faculties of the mind; and I would suggest this study as a special object of attention. With the view, therefore, of helping to render the literature of the subject more full and complete, I have drawn up the following cases, in part from the records of St. George's Hospital, in part from my own practice, and in part from the observations by others who have written in connection with the subject of diseases of the nervous system. I have as much as possible confined myself to cases in which post-mortem evidence of the change undergone by the nervous structures had been obtained.

The cases related are of several varieties. They will illustrate imperfection of language associated with disease both of the left and the right cerebral hemispheres, as verified by post-mortem examination; they will also exemplify defects of language in cases of right and left hemiplegia, in which no such examination took place, and also cases in which after death examination showed that no tangible

and visible cerebral lesion whatever had occurred, or that such lesion was more or less *general*, and by no means limited to any one locality. In many of the latter no hemiplegia or other paralysis existed. I shall not, of course, include cases in which defect in expression of ideas was the result of coma, or of chorea, or of drunkenness, etc.; though I shall notice some cases in which it appeared that the defect was connected with paralysis of the tongue. In some instances, no doubt, the defect of speech was owing to imperfect articulation by reason of paralysis of the lips, or other organs of vocalization.

Those cases which illustrate the association between defect of language and lesion of the left cerebral hemisphere (that association with which the profession has now become most familiar) I will postpone until I shall have adduced those which are of more rare occurrence, and, therefore, more interesting.

I will begin by relating cases in which the right side of the brain was the side diseased, and this alone, as determined by dissection, or assumed to have been so according to the symptoms.

CASE 1.—Benjamin B—, aged forty-eight, was admitted into St. George's Hospital on the 16th of October, 1861, with hemiplegia of the *left* side, the sensibility of the skin being entire. He was quite rational, and said that he had had a fit the day before. The muscles of the face were unaffected; but the tongue was protruded to the left side. Later on giddiness and loss of power of sphincters supervened; and on the 22d, though he had regained some use of the arm, his manner was confused, and his *articulation less clear*. "His manner became more weak and lachrymose," and his speech became *more indistinct*. Afterwards he rallied, so as to ask for what he wanted. Subsequently he became worse, cried a great deal, and "seemed to lose all power and will." An abscess formed on his hip; and later on he became drowsy, then unconscious, and died on the 16th of December.

After death the dura mater was found thickened, and much fluid was found in the lateral ventricles and under the arachnoid. The remains of two apoplectic clots were found in the right cerebral hemisphere: one, indicated by rusty discoloration, beneath the surface of the corpus striatum, and behind its centre, of the size of a horse-bean, and surrounded by soft cerebral substance; the other, anterior and external to this, between the corpus striatum and the Sylvian fissure, was larger, and also of a rusty color, the surrounding brain *not* being softened. Examined by the microscope, the smaller vessels were found to be natural; the larger ones very fatty. The large ones at the base of the brain were natural. Nodulations were found on the surface of one of the lateral ventricles, in connection with which the case was described in the *British and Foreign Medico-Chirurgical Review*, April, 1865, p. 305.

CASE 2.—A woman, aged seventy-nine, complained of pain in the right side of the head, with numbness and formication of the *left* arm and leg. There was some *impediment of speech*. She became hemiplegic on the *left* side.

After death softening of the right cerebral hemisphere was found. No other organic alteration was found. (Quoted from Copeman "On Apoplexy," p. 54.)

CASE 3.—A gentleman, aged fifty, subject to attacks of giddiness and headache, attended by loss of recollection and *impaired speech*. The attacks subsequently became more permanent, and he had violent paroxysms of pain, at one time relieved by arsenic. Mania-like attacks and then epileptic seizures came on, and then attacks of stupor. He died after an apoplectic fit.

After death a large coagulum of blood was found in the substance of the right hemisphere; and the whole arterial system of the brain was found much thickened and "ossified." No other morbid appearance in the brain. (Quoted from Abercrombie's "Researches on Disease of Brain," 1834, p. 242.)

CASE 4.—A gentleman had a blow on the back of the head. Several days afterwards he had much pain at the same part, where the scalp was tender. Subsequently, along with other symptoms, he lost the use of the *left* side of the body, and *nearly all the power of speech*. He became drowsy and died.

After death a large quantity of blood was found on the posterior surface of the *right* cerebral hemisphere, which ran between the convolutions; and much serum was effused beneath the cerebral and spinal membranes generally. (Quoted from Bright's "Reports of Medical Cases," vol. ii, p. 268.)

CASE 5.—William W——, of short stature, but not of full habit, enjoyed good health until the beginning of June, 1829, when he frequently lost his sight several times a day, so that suddenly, as he walked along the street, he was in total darkness for a few minutes. Towards the end of June he fell down unconscious, and had all the symptoms of apoplexy. Having been bled and cupped, he recovered his senses the next day; but both the arm and leg of the *left* side were completely paralyzed, and his *speech affected*. Sickness and giddiness occurred later on; for which he was again treated—purged, blistered, and cupped—with relief. He recovered the use of his limbs eventually, and in the middle of September was dismissed, having no complaint but a little unsteadiness in his walk. (*Op. cit.*, vol. ii, p. 323.)

CASE 6.—A man, aged twenty-five, after headache had numbness in the left arm, followed by left hemiplegia, the mouth being drawn to the left, and the tongue protruded to the same side. He did not, however, altogether lose consciousness, "but the articulation of sounds was lost." Delirium and *erysipelas of the affected limb* came on, and he died.

After death an abscess of the size of a chestnut was found in the right half of the tuber annulare, but passing a little beyond the median line. (Quoted by Dr. Copeman from the *Medical Times*, vol. v, p. 60.)

CASE 7.—A woman, aged 32, fell down in a fit and became *speechless*. Her speech soon returned, and she went to her work next day. For a week she progressed well; and then a second fit occurred, and she again *lost her speech*. Later on weakness in the right arm and leg came on. She died after a convulsive attack.

After death two clots of blood were found in the *right* cerebral hemisphere, external to the lateral ventricle. (Quoted from Dr. Boyd's "Contributions to the Pathology of the Brain," in the *Edin. Med. and Surg. Journal*, Case No. 807.)

Epilepsy—Treatment by Strychnia.

WALTER TYRRELL, M.R.C.S., communicates to the *London Medical Times and Gazette*, of April 18th, 1868, some remarks upon the treatment of epilepsy by strychnia.

He thinks irregularity in the performance of the uterine functions is one of the most frequent exciting causes of epilepsy. Among the group of cases in which strychnia has proved effective, with or without aloetics, etc., he brings forward the following:

A. C., aged 18, a girl of dull complexion and low nervous temperament, has suffered from epileptic attacks from eight years of age, but much more severely since the appearance of the catamenia, which have been irregular. During the past two years the attacks have recurred every four or five days and oftener at the menstrual period. They are violently convulsive, but are not preceded by any aura or other warning. Her memory is much impaired and she suffers from almost continual headache. I here commenced with $\frac{1}{12}$ grain of strychnia, and it was only necessary to increase it to $\frac{1}{10}$ th, as the good effects were at once perceptible in an improved state of health, regularity of the uterine functions, and an entire cessation of the fits; in fact, only two, and those at intervals of fourteen days, have occurred since she first commenced the medicine, and she has now been perfectly free for five months. In this case also, cold bathing, walking exercise, and early rising were made adjuncts to the treatment. Both in this and the following case the reason of the rapid success of a comparatively small dose is that the predisposing cause of the attacks was but slight, and that consequently an increase of nervous power being supplied to the medulla oblongata enabled it not only to restrain the irregular discharge of nervous power, but also to restore the healthy functions of the uterus.

A. B., aged 23, a dull, phlegmatic-looking girl, with low, retreating forehead, has been the subject of epileptic attacks for eight years; but latterly they have become much more severe in all their characteristics. The catamenia have never been regular. In this case I commenced with $\frac{1}{10}$ th of a grain of strychnia, which dose she continued to take for nearly two months, when it was increased to $\frac{1}{4}$ th. Under this (in combination with cold affusion and outdoor exercise) her health rapidly improved, and the attacks to which she was subject, about every ten days, decreased both in number and severity. She has now been entirely free from attack for more than four months, and has discontinued the medicine for nearly half of that time.

I have now been watching the effects of strychnia upon various forms of epilepsy since 1861, and I have no hesitation in affirming, that in a large majority of cases its effect is most beneficial; at the same time, I would not be at all understood to vaunt it as specific, *per se*, in all cases. I think that its value lies in the effect it has in deadening that condition of "exalted sensibility" and activity of the medulla oblongata which Van der Kolk (and, I imagine, most recent authors) considers the predisposing cause of the disease. That this is the effect of strychnia is, I think, proved by cases narrated in my former papers, but especially by the case which I mentioned in my last paper, a few points of which I will recapitulate, as it affords a capital illustration of my meaning: A gentleman, aged 40, had suffered for sixteen years from violently convulsive epilepsy. The attacks varied from fifty to sixty in the month, and occurred chiefly at night. His mental faculties were little if at all impaired, and his general health perfectly good. No exciting cause could be discovered, and he had used every variety of means without benefit. The only fact which had any bearing on the case was that, previous to the commencement of the attacks, he had been subject to frequent and severe epistaxis, on the stoppage of which the attacks apparently came on. Now, here was a case which would undoubtedly belong to that group which Dr. Reynolds, in his valuable work on epilepsy, has classed as most intractable and least amenable to treatment. Yet from the first day of this patient's commencing strychnia the attacks diminished, both in number and severity, in the most remarkable manner,

so that in the first month of treatment the attacks were only eleven in number against fifty-one in the previous month, and this without any increase of severity. Nor has this result been merely a temporary one; but the patient, who is still under treatment, has gone on progressing, and I heard from him only a few days since, to say that he had had an interval of eleven days without any attack. I single out this case, as it was one of unusual severity, was due to no special exciting cause, and belonged to a class of cases which are generally admitted to be very intractable, yet it yielded at once to the plan of treatment I mention. This might be called a case of pure epilepsy, for the disease was due to no exciting cause, and this would probably account for the strychnia alone being sufficient to produce such favorable results. In most cases, where various exciting causes are at work keeping up the sensibility of the medulla oblongata, it is necessary to remove them at the same time that we are restoring the healthy condition of the nervous centre by strychnia. The stomach, uterus, pharynx, kidney—in fact, almost any organ—may be the seat of these exciting causes; and I think that, in the treatment of epilepsy, the grouping of the cases according to the nature and locality of their exciting causes, offers the best prospect of success. Thus, I would in all cases give strychnia to remedy the predisposing cause, and at the same time endeavor to discover and treat the exciting cause or causes. In a large class of cases, the exciting causes of irritation will be found to lie in the gastric branches of the pneumogastric nerve, and it is in these cases that nitrate of silver, sulphate of zinc and copper are so useful, and they act, I believe, by deadening the sensibility of the nerves of that part. In irritation proceeding from the uterus and sexual organs the bromide of potassium is very useful, coupled often with aloes and other emmenagogues. In many cases, where I have found the disease coupled with irregular pulse and signs of cardiac derangement, I have found digitalis act well. With regard to diet, I find that almost all cases of epilepsy bear a liberal diet, with a fair amount of stimulant, and I have often seen marked improvement follow a change from a spare to a full diet; of course, attention must always be paid to the prevention of anything like a heavy meal, more especially in those cases in which gastric irritation would appear to be the exciting cause. I have, since writing my last paper, seen several cases of *petit mal* in children, and in all of which I have found strychnia successful: and I may here mention, that I think some distinction may be drawn between these attacks when they occur prior to puberty, and when they are present in adults. I think that in childhood they are less destructive in their effects upon the mind, and they certainly yield much more readily to treatment.

J. K., 11, a not unhealthy-looking boy, has been subject for five years to attacks of *petit mal*, with occasional severe fits of convulsive epilepsy, the latter having usually come on after an excess in eating, though twice they have occurred at night. He had convulsions in infancy. In the slighter attacks he would lose himself for a few moments, would stop talking, or would talk incoherently in the middle of some sentence, would occasionally turn his head over the right shoulder, and in some cases his countenance would become livid. His memory was not affected, and he was very fond of poetry and of books generally. I commenced to treat him in July last, enjoining great care in diet, that it should be liberal, plain, but never in great quantity at once. I gave him $\frac{1}{8}$ th of a grain of strychnia in solution twice daily; the attacks yielded almost at once, and he has now

been perfectly well for nearly six months. The attacks of *petit mal* were here very frequent; sometimes as many as three and four would occur in one day.

The above cases are merely selections from a number, and are chosen as presenting features very commonly met with—a plan which I consider more likely to be useful than the narration of cases which present symptoms but rarely met with. I may say that, in all the cases in which I have used strychnia, I can find but three cases in which it has not produced any favorable result; and, on the other hand, I have seen no case in which it has produced an unfavorable effect. With regard to the doses, in severe cases I am in favor of giving a medium quantity for a lengthened period, rather than carrying the dose very high at first. In one case, narrated in a previous paper, the dose taken reached as high as $\frac{1}{16}$ th of a grain twice daily, and this was continued for some three weeks without any bad effects being perceptible. But I find that quite as good results are obtained by a long continuance of a medium quantity, say from $\frac{1}{16}$ th to $\frac{1}{32}$ th of a grain, the system appearing to regain its nervous strength under the continued use of the medicine.

Functional Hemiplegia.

Dr. J. H. KIDDER, Assistant Surgeon United States Navy, reports in the *American Journal of Medical Sciences* for January, 1868, two cases of Functional Hemiplegia.

CASE I. *Progressive locomotor ataxia; partial insanity; left hemiplegia; death.*—Wm. K., coal-heaver, aged 30, born in Ireland; admitted into the Naval Hospital, Philadelphia, September 12, 1866, as affected with “partial paralysis.” This patient was wounded during the first attack on Fort Fisher, in December, 1864. He was at that time in the marine corps, serving on the U. S. S. *Juniata*. His statement is, that while engaged in loading the 100-pounder pivot gun of the *Juniata*, the piece exploded, the concussion rendering him unconscious, and one of the fragments of the gun fracturing the right tibia. He was finally discharged from the service; reshipped for duty at League Island in November, 1865, and has performed light duty until within a few days past, when he became unfit for duty. [Indorsement upon Hospital Ticket, dated September 8, 1866.]

September 15. Patient undersized, dark and rather spare; intellect cloudy, and memory much impaired. He contradicts himself frequently when questioned, and can give no reliable account of himself or his symptoms. Speech thick, but not unintelligible; gait tottering; tactile sensibility diminished, particularly on left side. His wife states that he has occasional attacks of raving mania, during which he is quite violent. Physical examination detects no organic disease of the viscera. Complains of pain along the spine.

20th. For some days past patient has shown a childish malice, annoying the servants of the house, and deriding the complaints of other patients. Last night he had a paroxysm of violent insanity, yelling and throwing himself against the walls of the room in which he was confined. Was quieted at length by valerian and morphia. He refuses to take medicine, and will avoid swallowing with much cunning, unless carefully watched.

October 3. Had another paroxysm last night, similar to the previous one, but less violent; no systematic course of treatment has yet been adopted.

14th. Ordered R.—Strychnise, gr. j; mic. panis, q. s. ut ft. pil. No. xv. S. One three times a day.

23d. Discontinue pills, no advantage having followed their use.

November 7. Continues to be exceedingly troublesome, annoying all the inmates of the hospital. For the past two weeks he has been growing more feeble, although still able to get about; is also losing his speech, being far less intelligible than at date of admission.

16th. Complains of scalding in micturition; glans penis is found to be inflamed, especially about the meatus; shirt stained with semen. He has to be carefully watched to prevent unseemly exhibitions of salacity. R.—Gum. camphoræ, gr. x, Ft. pil. No. x. S. Twice a day.

28d. More reasonable and orderly; continue pills one per day.

December 7. Blindfolded the patient, and found him unable to stand without support. On attempting to walk he moves his legs and arms spasmodically, and with an entirely disproportionate degree of violence, tottering and sprawling about. Notwithstanding, however, his apparent weakness, as manifested in the tottering walk, the grasp of his hand can scarcely be borne, nor can his limbs be flexed against his will.

Diagnosis.—Progressive locomotor ataxia.

28th. There is no longer any reasonable doubt that the patient masturbates. Cantharidal collodion to external surface of prepuce.

February 7. By keeping the penis constantly somewhat sore, masturbation has been effectually prevented. His disease has apparently made no advance, and his general health has improved. Treatment has been mainly confined to hygienic measures, systematic exercise, etc. R. Potassi bromidi, 3j; aquæ, f3ij.—M. S. Teaspoonful ter die.

13th. Sphincters have ceased to act. Discharge from urethra profuse and involuntary.

24th No improvement. Discontinue bromide of potassium.

26th. Patient less rational; speech unintelligible; inco-ordination of muscular action gradually increasing, having extended to the muscles regulating speech.

26th. R. Argenti nitratis, gr. $\frac{1}{2}$ ter die. Also, R. Tinct. Cantharides, gtt. xvi at bed-time.

27th. Suddenly, has become much worse. Some weakness of left side has been noticed for several days, and yesterday afternoon he became totally unable to walk or stand. The leg is more affected than the arm. Sensibility somewhat diminished on the affected side. Neither strabismus, coma, nor other sign of apoplexy. Complete incontinence of urine and feces.

March 6. Gradually improving. Continue treatment.

20th. Zinci sulphatis, ext. conii, aa. gr. x, in pil. No. xx. S. One every day at 2 P. M. Discontinue nitrate of silver. Can walk a short distance, though still weak on left side.

31st. The main disease (ataxy) is steadily progressing; hemiplegia continues to diminish. Arg. nit. gr. $\frac{1}{2}$, twice a day.

24th. At 8 o'clock suddenly attacked with left hemiplegia, more complete than previous attack. Left pupil somewhat dilated and conjunctiva injected. Breathing short, hurried, and laborious, but not stertorous. Patient bewildered but not insensible. Skin warm and profuse diaphoresis; pulse weak and rather excited. No sign pointing to apoplexy.

25th. Died at one o'clock this morning of asthenia. Owing to the objections of the patient's relatives no complete post-mortem examination could be had. The brain was examined, however, and found to be of normal size and consistence. Pia mater rather congested, with a slight deposit of lymph beneath the arachnoid superiorly and anteriorly. The arachnoid contained rather more fluid than is usual, and venous bleeding from the sinuses was abnormally free. There was no extravasation of blood within the brain-substance, nor did the ventricles contain an unusual amount of fluid. The septum lucidum was perhaps a little softened, and the floor of the fourth ventricle presented two or three lines of congestion. No cause for the hemiplegia was discovered, nor any abnormality, except the absence of the pineal gland. I have frequently seen as much peripheral congestion and exudation, when, during life, there had been no symptoms to direct attention to the brain.

Remarks.—For some time after admission this patient's symptoms were not so well marked as to lead to a suspicion of anything beyond the diagnosis of the hospital ticket. The great rarity of the disease, and the meagre accounts of it given in most of our text-books, aided the error, and the crucial test of blindfolding the patient was not applied until nearly three months after admission. When attention was once properly directed, however, error was impossible. The definition of the discoverer of the disease could not have been better met. Trousseau's description is decidedly the best available. He looks upon paroxysmal pain, occurring in various localities, and of brief duration, as one of the most important of the premonitory symptoms; yet, with the exception of pain in the back, over the dorso-lumbar spine, this patient presented no such symptom. "Nocturnal incontinence and spermatorrhoea" were so excessive as to lead to the suspicion of masturbation, and to this the disease was at first attributed; although the continuance of the symptoms, after the vice was effectually prevented, cast a doubt upon this supposition. The testimony of Dr. Charles West gave additional strength to this doubt, and to the surmise that the vice was rather a consequence than cause. "I have not in the whole of my practice seen convulsions, epilepsy, or idiocy induced by masturbation in any child of either sex, a statement, I need hardly add, widely different from the denial that epileptics or idiots may, and not seldom do, masturbate. Neither have I seen any instance in which hysteria, epilepsy, or insanity in women after puberty, was due to masturbation as its efficient cause." It seems fair to group ataxy with the diseases mentioned by Dr. West, in which case his assertion becomes applicable to it as well. There was no evidence of hereditary predisposition to nervous disorders in K.'s case. The cause of the hemiplegia remains in as much doubt as that of the ataxy. It is to be regretted that no examination of the spinal cord was permitted in this case. Doubtless degeneration of the posterior columns would have been discovered.

The hemiplegia, which was the immediate cause of death, was in my opinion functional, if such a thing be possible, akin to the cases of "apoplectiform cerebral congestion" described by Trousseau.

CASE II. *Right hemiplegia; death.*—T., beneficiary, aged 70, born in New York, admitted March 23, 1867, at 7.30 P.M., for right hemiplegia. T. has been under treatment several times for the effects of alcohol, having been an incorrigible drunkard. He was admitted August 5th, 1866, for fracture of left humerus, which, although the reopening of an old fracture of forty years' standing, united favorably in a pasteboard apparatus, and the patient was discharged October 8th fol-

lowing, without shortening or deformity. Patient was much bloated, and subject to attacks of urticaria of extraordinary severity. By constant and long-continued dram-drinking his constitution, originally very robust, as he stated, had become entirely shattered. On the evening of March 28d he was observed to be unsteady in his movements at the tea-table, overturning articles in reach, etc. Shortly afterward he was discovered lying near his bed on the floor and helpless. When I saw him, a few minutes later, he was lying upon his bed, streaming with perspiration, so that his clothing was soaked, his right arm and leg helpless, and face distorted, the angle of the mouth being drawn to the *left* side. There was no ptosis, but marked feebleness of the pharyngeal and glossal muscles, making it difficult for him to swallow. The muscles of the neck (sterno-mastoid, etc.) appeared to be not altogether incapable of contracting, although apparently more feeble on the affected side. He could not articulate distinctly any words requiring much movement of the tongue, the labial sounds remaining quite distinct; thus, in trying to say "remember," he could only say "member," articulating the labials and omitting the linguals and palatals. There was no sign of effusion or hemorrhage into the brain-substance, his mind being perfectly clear. Yet the lesion, if any existed, must have been as high as the fourth ventricle, since the right hypoglossal nerve was affected as well as the portio dura of the seventh, which also takes its deep origin from the side of that ventricle. I say, "if any existed," because the facial paralysis was upon the same side as that of the body, namely, the right, which would scarcely have been the case had any destruction of brain tissue existed above the decussation of the medulla oblongata. The patient could not expectorate, and the atony of the organic muscles supplied by the sympathetic nerve, so plainly indicated by his profuse diaphoresis, seemed also to extend to the mucous membrane lining the lung-cells and bronchi, for a most profuse transudation of muco-serous fluid clogged the air-passages, and, owing to paralysis of the right side of the diaphragm, could not be expectorated. Placing a hand upon either side of the chest, the right ribs in rising could be felt to drag behind the left, as though with great effort, but rose nevertheless. The intercostal muscles, therefore, may have been paralyzed, while the accessory muscles of respiration, to which the spinal accessory nerve is distributed, were intact. Paralysis of the right arm and leg was complete. The abdomen rose and fell loosely with each respiratory act. The diaphragm, owing to paralysis of the right phrenic nerve, was powerless, and remained loose and flaccid, puffed downward during inspiration and sucked upward in expiration, these actions being performed altogether by the accessory muscles. The patient got xxx of aromatic sulphuric acid three times, and fij of whiskey without benefit. Mucus continued to accumulate in the air-passages, and he died March 24th, at ten minutes past noon. His wife demanding the body, no autopsy was practicable.

Remarks.—The remote cause of death is doubtlessly to be found in the patient's mode of life, which rendered him peculiarly liable to injuries of the nervous system, and incapable of repairing their damages.

Paraplegia cured by Trephining.

Dr. CHAS. M. CLARK, late Surgeon 39th Illinois Vols., reports in the Chicago, Ill., *Medical Journal*, March 15th, 1868, p. 195, the following case of paraplegia, the result of slightly depressed bone over the fronto-parietal region of the skull, caused by a musket-ball.

Mr. F. S., late private of Company E., 39th Ill. Vol. Infantry, was wounded Aug. 15th, 1863, by a conoidal ball, which struck the left side of the head, impinging on the os frontis near the coronal suture, one inch and a half from the apex or crown of the os frontis. After the scalp-wound had healed under simple dressing, he was placed on light camp duty and evinced no bad symptom from continuous daily labor.

January 1st, 1864, he began to experience a feeling of numbness in his privates, nates, and right limb, which increased and extended to the left limb, and at the same time he commenced to suffer with difficulty in voiding his urine. He sought medical advice at this time considering that he had the *gravel*.

The case was brought to me November 27th, 1867, for examination, and after a thorough inspection of it, was directed to operate by raising the portion of depressed skull as a means of restoration to a normal condition.

December 9th, 1867, he was placed under the influence of a mixture of chloroform and ether—the hair shaved from the part, and a conical incision made through the scalp, and the flaps turned back. The periosteum was then scraped off and the trephine applied at a point that would cover the whole of the depressed bone. He was allowed to recover from the anæsthetic before the section was complete, in order that when the bone was raised, we might more fully note the result.

As soon as the circle of bone was raised (which was one inch in diameter), he commenced the free use of a limb that had hitherto been useless, and expressed himself as feeling as “good as ever!” Sensation and motion had returned almost on the instant that the bone was lifted, and he kicked about joyously.

After dressing the wound he walked unaided to his bed.

December 10th. Is feeling very comfortable this morning. Advised a mild aperient, with a pulvis of Opii et Potassæ Nitrat. Cold water dressing to the head.

11th. Rested well last night, but this morning had a light chill. Gave Quinine and Dover's powder.

12th. Expresses himself as feeling first-rate. Sensation and motion have returned almost complete, although there is some numbness about the perineum, but has no difficulty in controlling his urine or fæces. Removed stitches from the wound, which has united, excepting at the points of incision, where there is slight suppuration.

13th. Sleeps well at night; bowels move off naturally, and can control his water, which passes freely. Had some little vertigo in the morning, but soon passed away.

14th to 23d. Is increasing in strength daily, and can walk easily and readily without help of cane, especially up and down stairs. Wound of scalp entirely healed.

24th. Went home to spend the holidays, and walked nearly three miles.

January 3d, 1868. Returned to my care; has taken some cold, and feels weak; placed him on Iron and Quinine.

4th. The medicine gives him vertigo, and he loses control of his bowels and bladder.

5th to 10th. Discontinued the Iron and Quinine, and gave him Brom. Potass. and the best of food.

13th. Came to my office to-day, saying that he feels perfectly well, and wants a plate fitted over the “hole in his head.” Says his animal passions have returned,

and he wishes to go home to his wife. He has had no passion for a woman before since January, 1867, at which time the parts became paralyzed.

14th. Went home.

It should have been stated, that the least pressure over the depressed portion of bone, gave him very peculiar sensations down to the extremities of the toes of right foot.

When the skull was fully exposed and denuded of periosteum, the bone immediately over the depression seemed loose in texture, and blood oozed freely from it. The circle of bone was $\frac{1}{4}$ of an inch in thickness throughout its whole area.

Case of Abscess of the Brain.

Dr. H. S. CHEEVER reports in the *Detroit Review of Medicine and Pharmacy*, for February, 1868, p. 73, the following case:

Late in November, 1866, Miss C., æt. 18, in passing from one room to another, stumbled and fell, striking her nose and forehead against the door. This occurred on Friday. At first the injury seemed to be quite slight, but on the day following the left upper eyelid became swollen and painful. On the Wednesday following the inflammation becoming very intense, the patient was placed on antiphlogistic treatment. On Thursday the lid was much swollen and extended down over the cheek, which was also swollen. On Friday the lid showing signs of suppuration, it was lanced, causing a very free discharge of pus. During the afternoon of Saturday, the pain which since Wednesday had not been felt to any extent, commenced again with great intensity, and extended to the back of the head. Toward night the pain became so intense that she begged for morphia, and a quarter of a grain dose was given her. This checked it for a time, but at midnight it came on again, accompanied by delirium. A free application of warm water to the head, by her mother, checked it again, but toward morning it recurred, and another dose of morphia was given. From this time the patient was quiet and easy until half-past ten o'clock Sunday, when she appeared to fall asleep. Just before noon a hurried summons came with the word that the girl was dying. On reaching the house ten minutes after, we found her comatose, and breathing stertorously about five respirations per minute. The sphincters were relaxed. In about five minutes she ceased to breathe, though the pulse continued to beat for a short time after.

Twenty-four hours after, a post-mortem examination was made by Professor Ford, in the presence of Professor Sager, myself, and several medical students. On removing the calvarium, and examining the frontal bone, opposite the external swelling, no fracture was found. On the dura mater adjacent, and opposite the junction of the orbital and frontal plates, just internal to the supra-orbital notch, there was found a circular spot, about the size of a silver ten-cent piece, covered with laudable pus. The membrane was not perforated, nor was it more vascular than usual. On removing the dura mater, a dark greenish spot was observed under the arachnoid and pia mater, corresponding in size and form to the one on the dura mater. On tracing this spot into the brain, it was found to be the beginning of a tract, fusiform in shape, extending backward to the anterior corner of the left ventricle, and filled with semi-gangrenous brain-matter and greenish pus. This tract, at either extremity, was large enough to admit an index finger, but in the middle was expanded so as to form an abscess about one and a fourth inches in diameter. The left ventricle was filled with serum, broken-down brain-

tissue and altered pus. The remaining portions of the left hemisphere were sound, except that part lying adjacent to the abscess, which was changed in color to the depth of about one-fourth of an inch. The whole of the right hemisphere was apparently normal. On proceeding to the base of the brain, evidences of recent inflammation were found on the under side of the cerebellum and about the pons Varolii and medulla oblongata. The *pia mater* was unusually vascular, and laudable pus was found lying between it and the arachnoid.

The extension of the inflammation to the base of the brain and respiratory tract was undoubtedly the immediate cause of death.

On inquiry of the patient's friends, I learn the following facts:

Between the ages of six and nine years she had frequent epileptiform convulsions. Between the ages of nine and twelve she often had premonitory symptoms, but no actual seizures. Since the age of twelve she has been free from all such attacks, but has been subject to frequent and severe headaches. She is also said to have had spasmodic twitching of the left corner of the mouth for a long time. Her mind was in no degree impaired, and she had just graduated with credit from the Union School of this city.

The question now arises as to the origin of the brain trouble. Was it the direct result of the external injury, or had it a prior and independent origin? The relations of external and internal lesions were such as to suggest that one was dependent on the other. At the same time the previous history of the patient would indicate that the brain lesion had an earlier origin. I incline to the latter view.

Treatment of Neuralgia.

Dr. WILLIAM A. HAMMOND, in a lecture delivered at the Bellevue Hospital Medical College, New York, reported in the *New York Medical Gazette*, for April 25th, 1868, recommends in the treatment of neuralgia to give tonics: the best of the minerals is iron, the best of the vegetables quinine, and they may be advantageously combined. For eradicating the tendency to the disease the quinine should be given in frequent small doses; not more than two grains, even half a grain is often sufficient, with one or two grains of iron. The quinine may be used subcutaneously. I have used an ethereal solution, and have been pleased with its working. A dose of one or two grains once a day is sufficient, as it all is absorbed and none goes off in feces, as it does if given by the mouth even in very small doses. This I have proven by experiment. Of course arsenic may be used as a succedaneum.

A remedy which at one time enjoyed great reputation, is belladonna. Some years ago Mr. Turnbull published a large number of cases, all of which had been successfully treated with this agent. This great uniformity of success laid the report open to suspicion, either that there had been a mistake in diagnosis, or that the reporter was misrepresenting. Nevertheless, a good extract of belladonna is a very efficient drug against neuralgia. I have not used atropia much, because I have found some specimens quite inert, and because if it be good the dose is very small and difficult to graduate. The use of belladonna is chiefly to change the habit of the system, and you may begin with doses of one-fourth of a grain and increase as necessary. It acts in some unknown way upon the nervous system; very probably, partly by contracting the capillaries, just as it does in diseases of the

spinal cord ; but this is not its only action, for ergot, which has still greater power over the capillaries, does not influence neuralgia so favorably.

The hypophosphites may be given in doses of from ten to twenty grains, or of a drachm of the syrup. They act by setting free phosphorus in the stomach. They are less efficacious, but less offensive than the pure phosphorus. If the latter be used the dose is from one-sixtieth to one-fortieth of a grain.

The Relief of the Paroxysm.—The patient will generally submit to any infliction if it gives a reasonable hope of alleviation of the pain. I remember to have seen a woman in the West whose face had been shockingly scarred by the application of a hot poker for facial neuralgia. You may use first, subcutaneous injections of morphia. Formerly it was thought necessary to make the injection near the painful point, and thus sometimes accidents occurred, such as supra-orbital abscess. You should always avoid the face for subcutaneous injection ; a good point is the inside of the arm in the loose vascular skin. Three or four drops, containing the eighth of a grain, are generally sufficient, though if the pain be severe a very much larger quantity may be given, and I should advise you always to give enough, so as not to be obliged to repeat the operation.

Next in value probably is aconite. If you simply rub with a rag the tincture upon the painful point till pricking is felt, its internal use is unnecessary. I once caused temporary paralysis of the arm in a lady by too free an application of the tincture. Chloroform, internally, externally, or by inhalation, not carried to the degree of insensibility. Beyond the immediate relief repetition of the inhalation may break up the paroxysm.

You may also successfully use galvanism for the relief of the paroxysm, and for breaking up the habit of the disease. So far as my experience extends, both objects are best accomplished through the use of the direct galvanic current. For the first apply the poles so that the position is near the seat of the greatest pain, and pass the current continuously, for several minutes. To change the habit of the system, apply one pole to the nape of the neck, and the other over the course of each sympathetic nerve, moving it along the neck. Duchenne thinks you can generally relieve neuralgia by Faradization. I have not been so uniformly successful, yet I think you will often effect a cure by the applications I have mentioned.

As a last resort you have the surgical remedy of division of the nerve. Formerly the blunder of dividing the facial, or motor nerve, was committed. Of late some quite difficult operations have been performed, such as the section of the inferior maxillary and supra-orbital nerves. If you resort to such an expedient be sure to excise a portion, say a fifth of an inch, as simple division does not prevent the reunion of the nerve. The regulation of the diet should be the same as for the diseases of which I have already spoken. The use of tea I think generally aggravates neuralgia ; while coffee on the contrary does not, but if strong is often of service. You will therefore do well to interdict the use of the former.

Delirium Tremens Treated by Pulv. Capsici.

ROBERT W. JACKSON, F.R.C.S.I., Surgeon 100th Royal Canadian Regiment, reports in the *Canada Medical Journal*, for April, 1868, a number of cases of Delirium Tremens treated by pulv. capsici in 3ss doses, in beef tea and brandy mixture.

The results obtained were favorable, sleep coming on the night after the administration of the capsicum.

A Case of Tetanus

Successfully treated by two subcutaneous injections of morphia, the first of $\frac{1}{4}$ of a grain, the second of $\frac{1}{4}$ of a grain, injected between the shoulder-blades, near the spine, is reported by Dr. E. FICK, of Reval, in the *Berliner Klinische Wochenschr.*

III. BLOOD DISEASES.

Cases of Transitory Blindness in Typhus and Scarlet Fever

WERE reported and discussed before the *Berl. Med. Gesellsch.*, and from the report, published in the *Berl. Klinische Wochenschr.*, and a subsequent paper published by Professor HENOOH on the same subject, we condense the main facts.

(1.) Dr. EBERT's observations extend to four cases. The first was one of abdominal typhus in a child, 10 years of age. The cerebral symptoms were not very strongly marked. On the 14th day an attack of epistaxis took place, recurring during the night with great violence, and was only checked after several hours' duration. On the following day the child had become totally blind and could not distinguish light. This condition continued 36-40 hours, when the light of a lamp could be perceived, but without any definite perception of objects. After a quiet night the sight had become perfectly restored, and the patient from this time became convalescent.

(2.) The second case was in a boy, 11 years old, attacked with scarlatina. On the 17th day, after desquamation had taken place, a light œdema of the face was followed by œdema of the feet, back, and genitals. Urine strongly albuminous. Everything indicated a scarlatinous nephritis. On the 24th day, violent headache, vomiting, urine sparse, dark, bloody; pulse irregular. Next day headache, heaviness of the eyelids, mind partially deranged. Urine dark, reddish, turbid, but no albumen. So far, unconsciousness soon followed, then tonic spasms, lasting several minutes. The night was passed in a state of somnolency, the patient awakening occasionally, complaining of headache, and making impatient exclamations. Next morning pain in the eyes was particularly complained of, and the boy suddenly exclaimed, "I can't see!" Blindness complete, excrements passed involuntarily, head hot, lips dry, thirst severe, pulse 110, very irregular. The next morning patient more conscious, yet occasionally delirious; blindness continuing. In the afternoon perception of light and shade returning. An ophthalmoscopic examination, by Professor V. Graefe, shows nothing abnormal; pupils react. In the evening the patient was able to distinguish persons walking in the room, but could not recognize them. Some perspiration; feces and urine passed voluntarily; urine more abundant and highly albuminous. Next morning complete restoration of sight. After having passed through a chronic stage of Bright's disease, the patient was finally completely restored to health.

(3.) The third case is that of a little girl, 4 years of age, with symptoms very similar to the above, occurring in the course of scarlatina nephritis. The blindness was of 24 hours' duration, and occurred on the 20th day of the disease. Complete recovery took place.

4. A boy, 8 years old, was attacked on the 8th day of scarlet fever with œdema and albuminous urine; symptoms, however, mild. On the 14th day headache, nausea, apathy, increased temperature of the skin, pulse 120. Convulsions in the afternoon, continuing eight hours, followed by sopor. When the patient awoke he answered questions rationally, but the sight was gone. Pupils, however, reacted plainly and rapidly, complete blindness lasting only twenty hours. The urine voided during this attack showed very little albumen. The patient finally succumbed to an acute œdema of the lungs.

5. In Dr. Henoch's first case the blindness occurred twenty-five days after the eruption of scarlatina which had been followed by œdema. The blindness, as in the preceding cases, had been immediately preceded by headache and vomiting, stupor, and convulsive movements.

6. The 6th case also observed by Dr. Henoch was in a boy, 12 years old, in the course of abdominal typhus. At the end of the second, or beginning of the third week, the patient was noticed to be blind. Pupillary contractions, however, were normal. The attack lasted forty-eight hours, sight being completely restored on the fourth day. There had been no epistaxis.

Both Drs. Ebert and Henoch agree that these cases of transitory blindness, arising in the course of typhoid or scarlet fever, cannot be due to a pathological change in the retina, nor to a simple congestive state, but more probably to the occurrence of a diffuse, transient œdema of the brain, or of parts of the brain involving the optic nerve *intra cranium*. (Prof. Graefe corroborates this view, based upon ophthalmoscopic observations, that neither the retina nor the intra-ocular portion of the optic nerve can be the cause of this phenomenon.) This transient œdema, suggested as the cause by Dr. Ebert, he considers due to a watery state of the blood, favoring transudation, and caused (in the first case) by violent hemorrhage, in the other cases by the continued loss of its albumen.

Treatment of Malarial Fevers by Quinia Hypodermically.

In the New York *Medical Journal*, for December, 1867, Dr. E. C. SEGUIN, late Resident Physician, New York Hospital, reports a number of cases of malarial fevers treated by the subcutaneous use of the sulphate of quinia.

It was observed that four grains of the medicine under the skin were needed to break an attack of tertian fever, and that fully eight were required for a quotidian, administered two hours before the time of the expected paroxysm.

In the remittent form the experience was small and not satisfactory.

In about ten congestive cases the results were satisfactory, though, as usual, the mortality was very great.

In conclusion, a word as to certain consequences likely to result locally from the injections. Abscesses and phlegmonoid swellings have been observed in the hospital. In all, out of a very large number of injections (one patient receiving over one hundred), only six abscesses occurred, and not one of these after the middle of last January. In each instance the result was attributable to the introduction of insoluble particles along with the fluid. Maury reports two abscesses out of twenty-five cases, and Moore the same number out of thirty. When trouble was about to ensue, the swelling normally consequent upon the injection increased after the second day, and redness, together with a beating pain, were noted. The

centre of the swelling was usually soft from the first, and at that place the point of the pus occurred. No difficulty was observed in the healing of these phlegmons.

In numerous instances the patients complained of temporary anæsthesia in or about the part where the injections were given; but the place of election in fever cases being the chest, abdomen, and back, no great inconvenience followed. Ulceration, sloughing and reflex nervous disturbance were never observed, nor was cinchonism ever clearly produced.

Is Intermittent Fever Contagious?

In the *Boston Medical and Surgical Journal*, for January 30th, 1868, Dr. AMOS SAWYER, of Hillsborough, Illinois, asks the question, Is intermittent fever contagious? I am inclined to think it is, for the following reason. In September, 1865, while visiting a friend at Milton, Mass., I was seized with ague—a regular naturalizing “shake.” The lady of the house came frequently to my room, kindly administering to my wants; I was also quite an object of curiosity to her, as it was the first “ague fit” she had ever witnessed. On the fifth day from the time of exposure, she complained of a chilly sensation, followed by quite a fever, which lasted for an hour or more. I was convinced, judging not only from the general symptoms but from the appearance of the tongue, that she had the “dumb” ague, and so informed her; at this she was indignant, and evidently thought I was crazy: “Why, doctor! we never have ague here; I never heard of but two cases in this town, and they were imported from California.” Knowing it would be useless to argue the point with her, I let the subject rest. Each day brought a return of the chill and fever; when, on the morning of the ninth day, she had a “shake” that would have been a credit to an Illinoisian, and sufficient to convince her that I was correct in my diagnosis.

Bilious Remittent Fever.

Dr. W. B. HARVEY, of Canton, Miss., gives, in the *New Orleans Journal of Medicine*, for January, 1868, his treatment of bilious remittent fever, as follows:

“Regardless of the stage, grade or duration of the fever, the patient is directed to take a half gr. sulp. morphia, incorporated with grs. xv of blue mass, to be followed in half an hour by grs. x of sulph. of quinine (in pills), and at the same time a warm foot-bath, the vessel to be placed in the bed and the feet kept in it for half an hour. The dose of quinine to be repeated in two hours. This, together with a little castor oil in ten hours, to prevent ptialism, is the sum of the treatment, and the result, in my hands, has been a profuse perspiration and a speedy subsidence of all the symptoms—pain in the head and back, thirst, etc., etc. The fever may be expected to be subdued in four or six hours. While all must regard such success as a great desideratum, many, I am persuaded, will receive my suggestion with distrust, and few, I apprehend, will have the boldness to subject it to a practical test.”

Treatment of Rheumatism.

Dr. G. W. GARLAND, of Lawrence, Mass., writes to the *Boston Medical and Surgical Journal*, of April 9th, 1868, on the results of the treatment of acute rheumatism in his own person during seven attacks. In the fourth attack, he tried Dr.

Corrigan's treatment by opium, one grain in pill per hour, and sometimes two grains in the hour, until eighteen grains were taken in twelve hours, when "*decided relief*" was obtained. In two or three hours after the last of the eighteen pills was taken, vomiting and a diarrhoea occurred together with an overwhelming perspiration; the diarrhoea continuing for several days. The sweating continued ten hours. The inflammation of the joints subsided, and they resumed their natural size with truly miraculous rapidity. Returned to practice in twenty-eight days. He says:

"The two subsequent attacks were very severe, and were treated with cathartics and opium, but not quite *à la* Corrigan; just enough to secure rest and freedom from pain. Was out each time in about three weeks.

"The last attack, from which I am now rapidly recovering, was treated, after a cathartic, by subcutaneous injections of morphia, and from two to four times in twenty-four hours, using from $\frac{1}{4}$ to $\frac{1}{2}$ grain at each injection. The inflammation was in the left shoulder-joint and right foot, and the pain was nothing short of agony. All active symptoms were completely subdued in one week, and I was able to ride out in sixteen days.

"I have taken alkalies and colchicum on two occasions, without any marked effect, although I followed directions.

"In my judgment, *alterative cathartics and opium* are the remedies for acute rheumatism. It is an eccentric disease, and may subside sometimes with great rapidity under every variety of treatment. No sound inference can be drawn as to the value of any one method, unless it has been largely adopted in cases similar in all the leading causes and symptoms.

"In my case, exposure to atmospheric vicissitudes, going from heated rooms into the open air, and riding long routes, has always been the cause, complicated with indigestion and a torpid state of the liver and bowels; and in my humble opinion the four last attacks referred to above, and the uniform good result of treatment, go far to confirm the value of the opium or palliative treatment.

"I cannot close this brief sketch of what I might write on this subject, without referring to the clothing and bedding proper for persons who are predisposed to attacks of rheumatism. My experience confirms the statements of Dr. Chambers. Flannel should be worn next to the body in hot weather as well as cold, should be changed often, and never should be worn in cold weather after the fluff is worn off. Such persons should sleep in blankets, and during an attack of rheumatism should be literally wrapped up in blankets, and thus should be exposed to the air as little as possible. I would eschew *all* external applications of every sort and kind, except dry heat. No part of the surface of the patient can be exposed for the purpose of bathing, without taking a risk of inflammation of the heart. Dr. Chambers says: 'It is impossible to make too much of the value of *absolute rest* and an *evenly high temperature to the skin in rheumatic fever*,' to which I will fervently add, amen!"

Alcoholic Rheumatism.

JOHN HIGGINBOTTOM, Esq., F.R.S., of Nottingham, writes to the *British Medical Journal*, January 11th, 1868, upon this subject, as follows:

From long attention to the use of alcohol, in every form, as a beverage and as a medicine, I have been led to make observations, and have come to the knowledge of facts, which, I trust, will be of practical use, and may, perhaps, be new to the profession.

He comes to the following conclusions :

1. Alcoholic rheumatism is the result of a distinct cause.
2. It is produced by drinking fermented alcoholic beverages.
3. It is slow in effecting a marked visible change in the system.
4. It does not usually appear before middle life.
5. Its effects are produced by the accumulation of the fermented alcoholic fluids taken into the system.
6. It causes stupidity, stiffness in the body, hobbling gait, and ultimate lameness.
7. It causes changes of structure, producing chronic alcoholism.
8. The remedy is abstinence from the use of all fermented alcoholic drinks, and taking vigorous exercise in the open air.

Gout—A Prescription by Abernethy.

The remarks given below appear in the *British Medical Journal* of May 23d, 1868, p. 521 :

SIR : The following is the copy of a prescription brought to me a few weeks ago. It was for a middle-aged gouty subject, and was written by JOHN ABERNETHY. It may interest some members of the Association.

I am, etc.,

WALLER LEWIS.

MEDICAL DEPARTMENT, GENERAL POST-OFFICE, May, 1868.

R. Sodæ Phosphatis, Sodæ Sulphatis,	℞ Siv.
Ammonia Sesquicarb,	3ss.
Acidi Benzoici,	℞j.
Vini Sem. Colchici,	3iss.
Infusi Calumbæ, ad,	℞viij.

Misce. Sexta pars quartis vel sextis horis sumenda.

J. ABERNETHY.

Pathology and Treatment of Diphtheria.

Dr. M. K. STARKE, of Little Rock, Ark., in an article on Diphtheria, appearing in the *Humboldt Medical Archives* for March, 1868, p. 6, writes as follows :

In the course of my observations, I have noticed that the chosen subjects of this disease have been those in whom there exists some constitutional cachexia—the weakly, the scrofulous, the offspring of poorly fed, sickly, and delicate parents; the early orphaned and bottle-fed infants; those deprived of the proper elements of nutrition, and whose organs of digestion and assimilation could barely manage or appropriate them if present. I consider, therefore, the primary causation of the disease—the pathological condition favoring its development—to be a vitiated condition of the system, the effect of impaired and insufficient nutrition, upon an already strumous or otherwise depraved diathesis, either peculiar to the child or derived from the parent. If these views are correct in regard to the pathology of the disease, if the morbid condition is dependent upon defective assimilation and sanguification, rendering the blood deficient in organic and nutritious matters, our endeavors in the treatment of the disease should be directed to an improvement of the general condition of our patient rather than to the local lesions; and to meet this indication we prescribe the tr. ferri chl., quinia sulp., and brandy proportionate to age, and at intervals varying according to the severity of the attack. If the local lesions are urgent, and the patient can be easily controlled, there can be no

objection to the ordinary chlorinated washes or gargles; but the indiscriminate swabbing process, when we cannot see the condition of the throat, is fraught with any but good results. After the third or fourth day, which is about the usual time for the false membranes to soften and become detached, their removal may be facilitated by an emetic of ipecac., which will generally cause them to be thrown off.

The patient should also be encouraged, and, if necessary, forced to take freely and frequently of suitable nourishment, and I know of nothing better than fresh country milk. The laws of hygiene should be strictly observed and enforced, and of course due consideration given to any complications which may arise.

Asiatic Cholera.

Dr. PHILIP HARVEY, of Burlington, Iowa, reported to the Iowa State Medical Society, at its session in Davenport, May, 1867, a paper on Asiatic Cholera (*Iowa Medical Journal*, January—April, 1868, p. 52). After some remarks on the nature, cause, and prevention of this disease, he speaks as follows of

Its Cure.—It were better to say its treatment; for, to treat this disease is, unfortunately, not always to cure it. This head need not detain us long; for, although much has been written, I have very little to say upon it. To discuss the thousand and one methods of cure that have been recommended and failed, would be but waste of time. I shall, therefore, confine myself merely to that plan of treatment that has been most successful in my hands. I have found the following mixture to answer the purpose to check premonitory diarrhœa:

R. Tinct. Kino., Syr. Simp.,	℥℥ fʒss.
Tinct. Opil,	ʒssj.
Chloroform,	ʒssj.
Aq. Ment. pip.,	ʒssss.
M. ft. Mist.	

A teaspoonful to be taken in a little water whenever the diarrhœa is troublesome. Its use might be premised by a mild aperient of castor oil or Seidlitz powder, if it be indicated by a loaded condition of the *primæ viæ*; but for that state of things the looseness itself would be a sufficient remedy in a very short time, under ordinary circumstances. In this early stage of the disease, it will generally be sufficient for the patient to lie down, keep moderately warm, observe a very light diet of gruel, or dry toast and tea, and take the astringent and aromatic above recommended. Should the symptoms of veritable cholera have supervened, the use of sugar of lead and opium, in the manner recommended by Dr. Graves, of Dublin, has been successful in putting a stop to the disease in a very large majority of the cases in which I have tried it. Two grains of sugar of lead and a fourth of a grain of opium, given every half hour, or after every discharge from the stomach or bowels, as they become less frequent, I have usually found to put a speedy check to them. I have sometimes combined a grain of calomel and the same of camphor with the dose, but am doubtful if this addition is an improvement. A very large majority of cases in which I have seen this treatment used have progressed favorably, the recovery being rapid. At the same time I have used revellents of mustard, etc., to the abdomen and extremities, and to check vomiting forbidden the use of ingesta of all kinds as much as possible, merely allowing the patient to suck small pieces of ice, or swallow a teaspoonful of water

occasionally, to alleviate the tormenting thirst that is commonly experienced. Considering the discharges to be of the nature of a hemorrhage, I should refrain from using stimulants or heating remedies; indeed I am convinced, from what I have seen, that their effect is merely to hasten the case to a fatal termination. There can be no benefit from salines till absorption returns, when there is usually an appetite for something salt; this may be gratified in moderation with propriety. Saline effervescing draughts may be used advantageously to allay the subsequent thirst and fever. Nothing need be said of the special treatment of the subsequent fever or other sequelæ of this disease, as they should be treated, according to the circumstances, on general principles.

Treatment of Cholera.

In a paper published in the *Deutsche Klinik*, January, 1868, Dr. AUG. DYES, speaks highly of the beneficial effects of chlorine water in the treatment of cholera, particularly in the first and second stages. The author claims to have had really wonderful results. The use of this remedy is based upon the rational principle of the powerful disinfecting properties of chlorine, which destroys the cholera poison, or ferment.

Lumbago

Has been effectually treated by Dr. RUNGE, of Nassau (*Deutsche Klinik*), with powerful Faradization of the affected muscles (sacro-lumbar, etc.). To be of decided use the current must be sufficiently intense to produce local tetanus of the muscles.

Thermometrology; the Proagonistic Stage of Febrile Diseases.

Dr. WUNDERLICH, of Leipzig, published in the *Archiv der Heilkunde*, a paper on the proagonistic stage of febrile diseases, i. e., the stage preceding the agony of death. His main observations are regarding temperature, but they do not justify positive conclusions.

Observations of similar nature are recorded in the same Journal, by Dr. L. THOMAS.

IV. LOCAL DISEASES.

(a) DISEASES OF THE RESPIRATORY ORGANS.

Case of Pneumothorax with Metallic Tinkling.

Dr. O. FAIRFAX, of Richmond, Va., read before the Richmond Academy of Medicine (*Richmond Medical Journal*, February and March, 1868, p. 115), the records of a case of metallic tinkling in pneumothorax. He says:

"The metallic tinkling was so loud, as not only to be perceived and very accurately described by the patient, but to produce extreme alarm and distress in her mind. When I first visited her, a married lady of twenty-three years, I recog-

nized tubercular disease of the right lung, with a severe pleuritic pain of the same side. After a few hours, under treatment, she was greatly relieved, and continued partly comfortable for two or three days, when I was called to see her in the night, and found her sitting up in bed, in extreme distress from pain and difficulty in breathing and anxiety of mind. The first words she said to me were: 'Oh! doctor, what is this dropping inside of my chest? It will distract me.' I asked her how long she had perceived it, and what it resembled. She replied, that she had been conscious of it for several hours, and that it was exactly like water dropping on a sheet of tin. I applied my ear to the chest, and found a most perfect specimen of metallic tinkling. It was most distinct on the right back, but could be heard from every part of the chest to which I could get my ear applied. It was synchronous with the respiration, and would continue for perhaps a dozen drops and then cease, to be renewed upon the patient's coughing or speaking. The right back was tympanitic, under percussion, down to the false ribs. I found more respiratory sound in this part than I expected, but it had lost its vesicular character, and had become decidedly amphoric. From unwillingness to disturb her, I did not carry my examination further, thinking I could do so next day, but she died that night. No autopsy could be procured, because her friends wished to convey the body at once to a distant point.

"While it is a common observation, that some persons suffering with pneumothorax are conscious of the sound produced by succussion, and that some at the moment of the bursting of a vomica into the pleural cavity, have the sensation of something suddenly giving way in the chest, and even describe the feeling of a fluid flowing downward, I find no report of any patient being so thoroughly conscious of the metallic tinkling. Laennec taught, that the proximate cause of this sign was the falling of a drop of fluid from the fistulous orifice upon the surface of the fluid in the pleural cavity, generally present in pneumothorax; but in this case the effusion, if any, must have been small."

General Emphysema.

At the monthly meeting of the Dundee Medical Society, February 5th, 1868, Dr. J. W. MILLER, of Edinburgh, read the following notes of a case of general emphysema, which had occurred in hospital (*Edinburgh Medical Journal*, March, 1868, p. 860):

"Jane C., æt. nine, was admitted to the Hospital on 17th of January, about 11 A.M. The first glance at her gave the impression that it was a case of extreme general anasarca; but on touching the surface the distension of the cellular tissue was found to be due to emphysema, which existed to an extreme degree over the whole trunk, neck, and face. The whole surface was tender to the touch. Respiration was considerably embarrassed, and slightly accelerated, being 28 per minute. The lips, however, were of good color. She was unable to swallow. Auscultation was not very satisfactory, owing partly to the pain occasioned by the pressure of the stethoscope, but chiefly to the crackling of the air in the cellular tissue. The respiratory murmur, however, seemed natural, and equal in both lungs; and the cardiac sounds healthy. The pulse was 96, of good strength. She was quite conscious.

"Her history of her illness was not very clear; but after some trouble it was made out that she had been in her usual good health that morning, previous to going to the mill at 6 o'clock, A.M., and that, after being there about half an

hour, she had begun to swell; the swelling had rapidly increased, and she had been carried home. The first symptom observed by her was pain about the throat or neck. We could not succeed in discovering any cause for the supervention of the emphysema for some time; but at last she told us she had nearly choked on a piece of crust before going to work; and she afterwards stated that she did not get relief until the crust was ejected after a prolonged and violent fit of coughing. In all this violent fit of coughing we must find the cause of the emphysema, its probable mode of origin being that, during the violent expiratory efforts, some of the pulmonary air-cells were ruptured, the air then finding its way by the cellular tissue in the lung to that of the mediastinum, and thence to the subcutaneous cellular tissue of the trunk and neck.

"At 4.30 P.M., the emphysema was still increasing. The respiration was more embarrassed, being 38 per minute; pulse 132. There was great pain over the surface, much increased by pressure. A short incision was made by Dr. Anderson over each pectoral muscle, and on left side of the chest posteriorly, from which incisions bubbles of air continued for some time to well out. At 8 P.M., the swelling had considerably diminished, especially on the face, and she was suffering less pain. Pulse 132. She still refused to swallow. Next day at the hour of visit (about 11.30 A.M.), she was much better. The pulse was 120. The respiration was easy. She swallowed readily. The swelling was still diminishing. She said she was unable to lie on her right side. At 8 P.M., she moaned a good deal, and was troubled by a short tickling cough, caused, she said, by a pain in her throat.

"From this time she gradually recovered. On the 22d, the emphysematous crackling was still present over right lower jaw, along great cervical vessels of both sides, along the course of the vessels of left arm, and all over the trunk; but there was now little or no swelling visible to the eye."

Pneumonia Engaging the Top of the Lung.

The following case occurred in the Mercers' Hospital, Dublin, under the charge of Dr. MOORE (*British Medical Journal*, Jan. 4, 1868):

William McC., aged 28, a tailor, was admitted into hospital on the 2d of November last. He stated that some years ago he had inflammation of the lungs, when he got mercury freely. On admission he had an emaciated look, with hectic flush on the malar bones; his skin generally was jaundiced; his respiration was 40 in the minute; pulse 120; temperature 103°. He had a severe cough, with scanty semi-rusty expectoration; the tongue was dry and brown, and he had herpes on the lower lip. The patient was delirious the night after his admission. On examination we found dulness on percussion over the upper portion of the right lung, especially in front, while bronchial respiration was well marked; there was no evidence of extension of the disease beyond the upper lobe of the lung. The treatment adopted was, three-grain doses of quinine every fourth hour, six ounces of wine, with half a drachm of tincture of hyoscyamus in two ounces of whiskey-punch at bedtime. On the fifth, as the delirium and the typhoid symptoms were still present, instead of wine, he got a tablespoonful of brandy every second hour; the treatment, in other respects, was continued.

Nov. 6th. He had a better night; no delirium; expectoration puriform; temperature 99°; pulse still quick. The brandy was now to be continued; the quinine

to be omitted. From this date he steadily progressed, and on the 13th, after having been only eleven days in hospital, he went home at his own request.

Dr. Moore remarked that it was too commonly supposed that we had exhausted the subject of chest-affections in general, and pneumonia in particular; however, a little attention would show that there were several points worthy of still further investigation, as the above case exemplified. In the first place, there were the seat of the disease, and the unusually asthenic symptoms, especially delirium, next, the jaundice, and lastly the herpetic eruption on the lip. As regards the part of the lung engaged, pneumonia engaging the top of the lung was, as far as his experience went, invariably attended with low typhoid symptoms; when the asthenia was very great, "delirium" was present. He regarded pneumonia engaging the top of the lungs as sometimes a precursor of pulmonary phthisis. With respect to the "icterus," Dr. Moore drew attention to the fact that the patient was more jaundiced than many in whom unequivocal signs of hepatic disease existed. He referred to Virchow's views on this subject, who believes that "catarrhal icterus" always originates in the intestinal portion of the ductus choledochus; however, Dr. Moore thought that, whilst it might be due to such a condition, it might also, in many instances, be rationally accounted for by the pulmonary congestion giving rise to reflected hepatic venous obstruction, hence consequent pressure on the bile-ducts, and jaundice. The presence of labial herpes, although not particularly well developed in this case, was a symptom of great interest. He was at a loss to account for the presence of "herpes" in cases of pneumonia generally, and more especially why it should be confined to the labial branch of the fifth nerve. It was generally believed to be consequent on diseases which were ushered in by initial rigors; and on this subject he alluded to the very ingenious explanation of this eruption by Dr. Gerhardt, who considers it is due to the fact of the branches of the fifth nerve running through long narrow bony canals along with small arteries; these arteries contract during the rigor, then dilate, and their abnormal size gives rise to pressure on the branches of the trigeminal and sympathetic nerves. As to the prognostic value of this labial eruption, Dr. Moore, in common with the late Dr. Todd, Greisinger, and others, regarded it as favorable. On the treatment of cases of pneumonia engaging the top of the lung, with its attendant asthenic symptoms, more especially delirium, Dr. Moore observed that a stimulating treatment was indispensable. Wine or brandy should be freely administered; whilst, of the therapeutical remedies, he had the greatest faith in quinine, given in three- or four-grain doses at short intervals.

Inhalation of Spray of Tr. Ferri Chloridi in Pulmonary Hemorrhage.

Surgeon GEORGE M. STERNBERG, U. S. A., Fort Riley, Kansas, reports, in the *New York Medical Record*, February 1st, 1868, the following case of traumatic pulmonary hemorrhage, which presents some points of interest, and illustrates one of the uses of Richardson's spray apparatus.

Mr. W., a merchant, aged 28, while attempting to put a drunken man out of his store, received a stab in the neck, inflicted by a long, narrow-bladed butcher's knife. The knife entered the neck on the right side two and one-half inches above the clavicle, and just to the right of the common carotid artery, cutting the anterior jugular vein, and passing downward and backward into the lung.

The bleeding from the vein was free, but a bystander controlled it by pressure with his thumb, and it did not recur.

Mr. W. at once commenced coughing and expectorating bright red blood, filled with minute bubbles of air. From this time until I was called (about eighteen hours) he continued to cough up every few minutes a mouthful of blood.

When he was first wounded he sent for a hospital steward of the army, with whom he was acquainted. The steward probed the wound, and stated that the œsophagus was wounded. I presume his diagnosis of the case was founded upon the facts that blood came from the mouth, and that any attempt to swallow the medicine he gave produced a violent paroxysm of coughing. The steward prescribed tinct. ergot with a view of controlling the hemorrhage, and injections of beef tea and brandy to keep up the pulse. As the hemorrhage continued and the man was rapidly becoming exhausted, his friends became alarmed and sent for me. After seeing the case, I at once sent for my Richardson's spray producer and some tinct. ferri chlor. The distance was six miles, and it was two hours before my messenger returned. In the meantime Mr. W. continued to cough up a mouthful of blood every few minutes, and the total amount during the two hours could not have been less than sixteen fluid ounces. Perfect rest was enjoined, and no treatment adopted until the spray apparatus arrived. I then added half ounce tinct. ferri chlor. to five ounces of water, and placing the extremity of the instrument well back in the mouth, caused the spray to enter the lungs, by pressing the bulb at each inspiration. This was continued for about a minute, and after an interval of five minutes was again resumed for a minute.

The hemorrhage was arrested completely, and did not recur. About twenty minutes after a hypodermic injection of morph. sulph. gr. $\frac{1}{4}$ was administered, and in a very short time the patient fell into a quiet sleep. I remained with him all night. He occasionally woke up for a moment and then dropped asleep again. The next morning he commenced to cough up occasionally a little dark clotted blood, evidently a part of the clot formed by the action of the tinct. ferri chlor.

Perfect rest was enjoined, and injections of beef tea and brandy were administered from time to time during the next twenty-four hours. The following day he was able to swallow a little wine and beef tea, and in addition to the small clots of dark blood, a little muco-pus was expectorated.

He continued rapidly to improve, the external wound healing by first intention, and there being no inflammation of the lung beyond the immediate vicinity of the wound. He is now (nine days after the injury) able to sit up in his bed, and to attend to some business.

He lost his voice entirely from the moment he was wounded, and has not yet regained it. He can only swallow liquids, in small quantities at a time, and then by an effort and using great care, as there is a disposition for them to pass into the larynx, producing violent paroxysms of coughing.

These phenomena are probably due to section of the recurrent laryngeal nerve, or some of its branches.

Catarrh.

Dr. JOHN ADDINGTON SYMONDS, F.R.S.E., Vice-President of the British Medical Association, says (in the *British Medical Journal*, May 9th, 1868, p. 448), upon the subject of catarrh:

For preventing this slight disorder from running into bronchitis, I have found no plan so generally effectual as the prescription of a pill of calomel and opium and ipecacuanha at night, followed by a purgative in the morning, consisting of Rochelle salts and senna. The patient must remain in bed for at least half a day. The efficacy of this method is in a direct ratio with the promptitude of its administration. A delay of twelve hours will make it futile. The complaint must be seized by the forelock. But is it worth while to resort to such discipline for a common cold? For delicate persons, prone to bronchitis and graver ills, it is well worth while to crush the incipient mischief. When opium or morphia cannot be taken, these pills are useful.

R. Ext. Hyos., Pulv. Conil, Sing., gr. iv.
 Calomelanos, Pulv. Ipecac., Sing., gr. j.
 M. Fiant pillule ii vespere sumendæ.

But the purgative draught must be appended. This treatment, however, cannot be followed by the majority of mankind. If they can take any remedies, the best are either frequent doses of sal volatile in camphor mixture, or a scruple of chlorate of potash, with fifteen minims of chloric ether every four hours. A hard-worked doctor can hardly find time to help himself to these small solaces. He can only depend on the uncovenanted mercies of *laissez faire*; and, whether knocking at street-doors, or auscultating chests, or "ascertaining progress," or inditing prescriptions, his only comfort is silk or cambric, and he is more pitiable than half of his patients.

Influence of Respiration on the Duration of the Heart's Beat.

A. TERNÉ VAN DER HEUL, publishes an article on this subject in the *Nederl. Arch. voor Genees-en Natuurk*, III, 137-176, in which he mentions the result of a series of experiments made by him with the Pneumograph of Marey, and with the Cardiograph.

He found that in tranquil respiration the heart's period was less during inspiration than during expiration by from 10 to 19 per cent. of the inspiration.

At the end of the inspiration it is least, and greatest at the end of the expiration.

The curve described by the Pneumograph alone, will often show the heart's impulse also, as the blood sent away by the systole is not replaced quite at the same moment by other blood.

(b) DISEASES OF THE CIRCULATORY SYSTEM.

Gangrene of the Heart.

Dr. D. S. YOUNG, Professor of Surgery in the Cincinnati College of Medicine and Surgery, records in the Cincinnati, Ohio, *Medical Repertory*, for May, 1868, a case of gangrene of the heart.

This is a disease in regard to the existence of which nearly all modern pathologists are in doubt. In fact, but few writers refer to it; or if they do, it is only to express their conviction of the incorrectness of the diagnosis of cases reported, and of the impossibility of life continuing until such a change could take place in so important an organ.

The following case is therefore of particular interest :

Henry McNulty was a native of Ireland, aged 65, and had been an inmate of the Cincinnati Infirmary for several months. He was first admitted for chronic rheumatism, under which he had labored for a number of years, the motion of both hip joints and of the left knee being much restricted. He had never felt any difficulty about the heart, and no unnatural sounds could be discovered. His general health was good.

Some time about the middle of January, 1860, he injured the thumb upon the right hand, which terminated in necrosis in a few days. Chloroform was administered, and the last joint removed. He took the chloroform well, and rallied without any unpleasant symptoms. The wound progressed favorably.

Two days after the operation, he complained to the nurse that there was soreness in his chest, and that his head felt badly, but as these symptoms did not particularly distress him, no report was made to me. The next morning I found him with a hot skin, coated tongue, rapid pulse, and complaining of a burning sensation on the chest, with considerable difficulty in breathing. The action of the heart was regular, but having a peculiar softness, which I had never before observed in any patient. It was nearly as full as in health; while the softness and compressibility of the artery was very singular and characteristic. He attributed his condition to the chloroform, and now, for the first time, said that he had not felt right since he inhaled it. I gave but little attention to the statement at the time, but during the following night and the next day, when he began to cough and complain considerably of his lungs, I gave it more consideration, although there were no indications that the anæsthetic had anything to do in exciting the symptoms present. These continued to increase during the night and next day, and on the following night he grew very restless—his lips became blue at times, and the veins of his face and neck full and tinged with blood—he also suffered from urgent dyspnoea occasionally. His breathing was constantly hurried, and as the disease advanced, the pulse grew weaker, and the brain gave decided symptoms of a congested condition. The sensibilities grew dull, and he ceased to complain. The pulse disappeared at the wrist, and in a short time he died. The action of the heart was always regular, and I never could detect any abnormal sounds. He died about 8 o'clock A.M., January 23d.

At 10 o'clock, A.M., of the same day, I made a post-mortem. The corpse immediately after death was removed to the dead-room in the cellar, which was dry and well aired. The muscles were slightly stiffened, but the body still retained some warmth. After elevating the sternum, my attention was attracted to the dark appearance of the upper and front surface of the pericardium, and the tissues immediately around it. On dissecting carefully the cellular tissue from it, I found it of a dark color, but as firm and unyielding as when it was natural in appearance. Upon opening it a quantity of gas escaped, and the cavity collapsed—I had not observed that it was distended until this occurred. At the same time a most disagreeable fetid odor was experienced. This was so strong and characteristic of gangrene that it could not be mistaken for an instant. It filled the room, and the passage outside for some distance, and I had some difficulty in removing it from my hand. The cavity contained about two ounces of a dark-colored fetid fluid, of the consistency of treacle.

The heart was dark-colored, the right auricle being almost black. Upon attempting to elevate it to examine its posterior surface my finger penetrated the right

auricle, although but slight force was used. I then removed the lungs and heart from the thorax and proceeded to examine them critically. Found the whole anterior surface dark-colored. This hue was principally confined to the right side of the heart, and was most marked over the auricle. A greater part of its surface was black, or intermediate between that and a dark chocolate color, with a tint of greenish-blue. The color became lighter as the apex was approached, which was very livid. The anterior wall of the auricle could be easily separated by the fingers or forceps. At the point where it had been penetrated by the finger, it appeared to be almost ready to fall in pieces. When the fibres were torn and broken, they retained their shape, but were very friable. On making an incision from the rent to the apex, extending into the auricle and ventricle of the right side, and examining the cut edges, they were found to correspond in color to the external surface. The tissue was softer than in the normal condition, until within about a quarter of an inch of the natural surface—in some places rather more. This part appeared somewhat denser than the unaffected portion of the organ, and was of a light maroon color; and corresponded, as nearly as could be expected, to a similar condition around the margin of gangrenous tissues, which is often seen in cases of traumatic hospital gangrene. The remaining portion of the heart was quite natural—perhaps a little flaccid—but gave no evidence of fatty degeneration or inflammation. The whole organ appeared smaller than usual, with a shrunken appearance. The valves were perfect, except upon the right side, the outer portion of the tricuspid being changed in color and less firm than in the healthy portion. The vena cava and pulmonary artery were unchanged. The right side of the heart was partly filled with blood; that in the ventricle was partly coagulated. The left side was empty.

No other traces of gangrene were observed elsewhere in the body.

In Gross's *Path. Anat.*, vol. 2, p. 136, 1839, the author says: "Leaving out of the question the more doubtful testimony of Bonetus, Morgagni, Lieutaud, and others of the seventeenth and eighteenth centuries, the result of the observations of modern writers, are, I think, abundantly sufficient to settle the point." He also states that Portal, Goulay and Kennedy relate each a well-marked example of this disease. But in the last edition of his work, published 1857, p. 455, he says, in a brief notice of this condition, "My own belief is that such an occurrence is impossible, death ensuing long before such an event could take place; and the instances which have been published of this so-called termination, have been merely examples of softening, rapidly followed by putrefaction." This is the opinion of most modern writers upon the subject.

Dr. Young claims his case as an example of gangrene, because in the first place the odor of gangrene was unmistakable, and it is never met with in tissues that are not disorganized by gangrene before the death of the patient. Then also the time was too short from the hour of death to the examination for such a change to take place, and it is well known that the heart is among the last of the thoracic organs to change. Again, softening by fatty degeneration never undergoes such a rapid change. There was a marked disposition to death of the tissues, both of the soft parts and the bones, from slight causes, and there were none of the other organs disposed to decomposition, although they were congested and engorged with blood. It is also remarkable, if this was a case of softening by inflammation, followed by rapid decomposition, that the left side of the heart showed having more marked signs of inflammatory action. Certainly one side could not be in-

flamed to such an extent as to be disorganized, and the other so slightly affected as not to be plainly visible. The tone of the patient's pulse, from the first, indicated that there was a want of tonicity in its action, and that the tissues had lost their power long before death. Again, several observers assert that they have found a well-developed line of demarcation. In the case under consideration it existed, or if not very distinctly marked by efforts of reparation, there was the same condition of the parts which we find in those cases of rapidly spreading gangrene, in which the life of the patient is destroyed before nature can form a line between the sound and unsound parts. The argument that the patient would perish before such a change could take place in so important an organ may be valid in most cases; but that it is in all, we have reason to doubt. Persons usually die of wounds of the heart immediately after their infliction, or within a very short period, yet well-authenticated cases are numerous, showing that life has been continued for a long time after this organ has been extensively mutilated; and with bullets and other foreign substances embedded in its substance or lodged in its cavities.

The heart is also subject to ulceration, both upon its internal, and external surfaces. Of this there is no doubt; and we are told that in some cases it extends almost through its walls,—only a thin stratum remaining—and the person living. Now it appears quite as reasonable, that we should expect patients to perish, long before such extensive changes could take place from this cause, as well as from gangrene. Abscesses are also frequently found in the substance of the heart as in other parts of the body, and the patient living for a long time after such symptoms have manifested themselves—death resulting from some other disease. In fact, we find this organ undergoing all of the changes to which other portions of the body are subject. The history of this case, and also that reported by Kennedy, confirms the probability that gangrene of the heart can exist during life. In the former, the peculiarly indescribable odor of gangrene, which every person will recognize who has ever observed it, Dr. Young thinks renders it certain, he having never observed it in any other form of decomposition of animal substance.

Thoracic Aneurism—Symptomatic Value of Herpes Zoster in.

Dr. WILLIAM MOORE, of Dublin, M.R.I.A., Fellow of the College of Physicians, Physician to Mercer's Hospital, Lecturer on Practice of Medicine, etc., etc., contributes to the *Dublin Quarterly Journal of Medical Sciences* for February, 1868, p. 69, the following remarks upon the value of "herpes" as a symptom of thoracic aneurism.

Assuming with Von Bärensprung that direct irritation of nerves is capable of producing severe inflammation in the parts to which they are distributed, which may even take the form of vesicles, I will give a brief outline of two cases.

Michael L.—was admitted into Mercer's Hospital, complaining of distress of breathing, difficulty in swallowing, severe pain radiating over the shoulders and down the back. He had a hard ringing, laryngeal cough, with aphonia. Both pupils were contracted, especially the right; there was dulness on percussion, and a second centre of pulsation over the top of the sternum; the respiration in the left lung was feeble; the left radial pulse could scarcely be felt; the veins over the top of the sternum were too prominent, and the patient had hæmoptysis. In addition to these unequivocal symptoms of aneurism, or intra-thoracic tumor, he

had latterly been harassed with boils and herpetic eruptions over the upper part of the chest, and between the scapulæ.

CASE II.—Patrick —, aged forty-four, was a patient in Mercer's Hospital. He suffered from neuralgic pains over the top of the chest and sternum; from a troublesome ringing cough; from dysphagia; from tightness of the skin of the left side of the face; from occasional intense heat of the left ear. There was slight drooping of the left angle of the mouth, and the left pupil was more contracted than the right. The superficial veins over the upper part of the chest were remarkable, and a tumor extended from the right clavicular articulation across the sternum. An herpetic eruption was present over the chin, neck, and chest.

Here were two cases of thoracic aneurism, in which we had unequivocal evidence of nervous pressure, and in which herpetic eruptions were present.

You may say the presence of this cutaneous eruption in these cases is a very trivial matter, and of little, if of any, practical value. I answer, fifteen or twenty years ago so would have been regarded contraction of the pupil, increased temperature with increased sensibility of half the face, or slight alteration in the muscles of expression, or increased flow of tears or modification of the voice, and yet what an advance these symptoms have given us in the diagnosis of a malady, till lately the most latent in the whole category of diseases—namely, thoracic aneurism.

In cases where no positive local physical signs exist, the presence of any such symptoms as I have enumerated, coupled with dysphagia, dyspnœa, inequality of respiration, hæmoptysis, or any one or more of such phenomena, would point to pressure (especially nervous) within the thorax from tumor of some kind. Hence if such important strides have been made by these collateral nervous symptoms, and now if, in addition, we find that nervous pressure is capable of producing "herpes," we have another link in the diagnostic chain which we cannot afford to overlook.

Diagnosis of Cardiac Disease—Post-mortem.

T. B. PEACOCK, M.D., F.R.C.P., Physician to St. Thomas's Hospital, etc., relates in the *London Lancet*, February 29th, 1868, the following case of cardiac disease, which displays several points of interest connected with the diagnosis.

Mitral valvular disease, chiefly regurgitant; dropsy; enlarged liver: probably a sequence of rheumatism in early life.—J. M—, a milkman, aged forty-one, admitted October 4th, 1867. He stated that his family was healthy; his father having lived to upwards of seventy, and his mother to upwards of sixty, and two brothers and a sister—all the family—being alive, and, except the latter, healthy. When fifteen years of age he had an attack of rheumatic fever, from which he suffered for about three months; and he had since been subject at intervals to pain in the limbs, particularly the knees. Somewhat more than three years before his admission he had inflammation of the liver, and was laid by for about six weeks.

His last illness commenced about six months previously, with pain in the right side, followed by shortness of breath and palpitation and uneasiness in the region of the heart. When admitted, he complained chiefly of pain in the lower part of the chest, in each side, and in the loins. He had great difficulty of breathing, and palpitation; the lips were purple, and there was a general icteroid tinging of the

skin and conjunctivæ, with œdema of the lower extremities, and some ascites. The liver was found to extend further into the abdomen than it should, and it was hard and tender to the touch. The cardiac dulness was enlarged transversely, but not vertically, extending from the right side of the sternum to near the line of the left nipple; the apex beat over a wide space in the fifth interspace below the nipple, and the impulse was diffused and undulating; the action of the heart was unequal in force, and there was an occasional intermission. A systolic murmur was audible over the whole precordia, but much the most loudly about the seat of pulsation of the apex, and it did not cease abruptly, but gradually died away. It was heard distinctly in a line from the apex towards the left axilla, and, with the more powerful impulses of the heart, at the lower angle of the left scapula. At the base of the heart the murmur was also heard, but it was of a softer character, and shorter; and it was there followed by a distinct second sound. There was also a murmur of a somewhat harsher character heard to the right of the upper part of the sternum. The percussion-sounds over the chest were not impaired; and the respiratory murmur was natural, except being somewhat harsh, especially at the left apex. There was marked pulsation of the carotids, and the external jugular veins were somewhat distended. The pulse at the wrist was small, and of unequal force, though always feeble; and it occasionally intermitted. The urine was scanty, and contained a copious deposit of lithates and a slight trace of albumen.

While he was in the hospital the symptoms continued much the same; but the anasarca increased, the liver became more engorged, and he gradually lost power. He was repeatedly examined, without any material difference being observed in the physical signs, except that on the 10th of October the murmur was reported at the apex apparently to accompany the systole, while between the nipple and sternum it seemed slightly to precede it. A decided thrill was felt with the impulse of the heart at the apex.

On the 31st of October the urine, which since it was first examined had been repeatedly tested without displaying any trace of albumen, was reported to be again slightly albuminous, but this was not afterwards observed. At this time also there was found to be some effusion in the right pleural sac; the abdomen was now swollen, and the lower extremities had become very œdematous, but not tense. The jaundiced tinge of the surface was more marked, and his breath had a decided hepatic odor. For the last three weeks he was gradually dying. His face and left arm became thin and emaciated; but the right arm, upon which he lay, was somewhat swollen. He died rather suddenly at 8 P.M. on the 24th of November.

The examination took place at 10 A.M. on the 25th; but the heart only was allowed to be opened. There was one large white patch on the anterior surface of the right ventricle, which admitted of being torn off, and left a smooth surface beneath it. There was also considerable opacity and thickening of the pericardium on the surface of the right auricle, and to a less extent on the left auricle and in the course of the vessels on the posterior part of the ventricles. The pericardium on the aorta and pulmonary artery was thickened and opaque, and the two vessels were somewhat closely and firmly united. The heart was generally enlarged, and weighed, a day after being removed from the body, 19 oz. 14 dr. avoirdupois. The left ventricle was very much dilated, and especially widened and rounded at the apex, and its walls were increased in thickness. The folds of the mitral valve were adherent together, and much thickened and indurated; and one of the cords was entirely separated from the curtain, so that it allowed a large portion of the

free fold to be turned back. The ruptured cord was much thickened and hardened, and studded at the broken end with vegetations, forming a thick mass which projected into the auriculo-ventricular aperture. The other cords were also thick and firm, and the columnæ carneæ were large. The left auriculo-ventricular aperture was smaller than it should be, so that there was both obstruction to the flow of blood into the ventricle and free regurgitation into the auricle. The aortic valves were somewhat thick and opaque, but not apparently incompetent. The cavity of the left auricle was considerably dilated, the lining membrane thick and white, and the muscular walls increased in width. The right ventricle and auricle were also dilated, and somewhat hypertrophied.

This case presents several points of interest, and especially in reference to the diagnosis. The increased dulness on percussion in the transverse direction, and particularly on the right side, with comparatively little extension in the vertical direction; the diffused pulsation of the apex; and the murmur accompanying the systole, dying gradually away, heard all over the precordia, but most loudly below the nipple, propagated towards the left axilla, and audible also at the lower angle of the left scapula,—all indicated that there was regurgitation through the left auriculo-ventricular aperture. No hesitation was therefore felt in giving that diagnosis when the patient was first admitted into the hospital. A systolic murmur was also heard to the right of the upper part of the sternum, which was somewhat different in character from the murmur at the apex; and it was thought that the latter might depend upon the existence of some thickening of the aortic valves. This supposition was the more probable from the cardiac disease being apparently the sequence of rheumatism, and from the frequency with which rheumatic endocarditis, though chiefly affecting one set of valves, involves to a greater or less extent the other. In both these respects it will be observed that the diagnosis was confirmed by the examination.

It proved further that not only was the mitral valve incompetent, but that the capacity of the orifice was considerably diminished. Indeed the aperture was only capable of allowing of the passage of a ball 30 French lines in circumference (67.5 millimetres, 2.66 English inches); while the ordinary capacity of that orifice is 45.2 lines (101.7 millimetres, or 4 English inches); and as all the other outlets and the cavities were enlarged, the aperture, to maintain the just proportion, should have been still larger. Were there, then, any indications during life of the existence of this condition? On one occasion it was thought that the murmur, as heard between the nipple and the sternum, slightly preceded the systole, but this was not confirmed by subsequent observation, and there was not at any time a distinct presystolic murmur, so that in this respect there was nothing which decidedly indicated the existence of obstruction.

It was, however, noticed that a thrill or "purring tremor" was felt about the seat of pulsation of the apex; and this was regarded as probably due to mitral obstruction. Since the occurrence of the *bruissement* felt by the hand applied over the precordial region was first mentioned by Corvisart as an indication of valvular disease, practitioners have been familiar with the sign. It is probably generally caused by the powerful contraction of one or other ventricle, forcing the blood through a narrow passage; and is frequently met with in cases of contraction of any of the cardiac apertures. Laennec and Hope speak of it as most commonly felt in cases of mitral disease; but I have myself more frequently detected it in cases of constriction of the aortic and pulmonic orifices, and especially in con-

genital contraction of the latter aperture. Laennec also says that the thrill does not depend on any constant organic cause; and I have felt it very characteristically in the course of the pulmonary artery in cases in which the obstruction was situated at the left auriculo-ventricular aperture. Generally, however, it occurs in connection with a constricted orifice, and more or less immediately in the seat of constriction. In cases, therefore, like the present, in which there is a distinct thrill felt, and this is very much limited to the apex, we may, I believe, conclude that there is some source of obstruction at the mitral orifice; and when the signs of regurgitation are also present, that the case is one of combined obstructive and regurgitant disease. As regards the precise mode in which the tremor in this class of cases is produced, I should agree with Dr. Hope, that it is more probable that the retrograde current forced through the orifice with the ventricular contraction gives rise to the vibration, than that it originates with the comparatively feeble direct current dependent on the auricular contraction.

(c) DISEASES OF THE ORGANS OF DEGLUTITION AND DIGESTION.

The Etiology and Treatment of the Round Ulcer of the Stomach.

In a communication on this subject to the *Wiener Medic. Presse*, Prof. C. GERHARDT, of Jena, remarks that the ordinary, so-called round ulcer of the stomach, is one of the most frequent, and, at the same time, easily curable diseases. Under normal relations, the gastric mucous membrane is not digested by its own secretion, on account of the alkaline plasma in which it is continuously bathed by its vessels. But it is acted upon by the acids of the gastric juice as soon as the circulation of its vessels is interrupted. Hence the *embolic* gastric ulcers in patients suffering from heart disease, of which MERKEL has related a remarkable instance; hence, also, the artificial gastric ulcers which PAVY has succeeded in establishing, in experiments on animals, by ligating arterial branches of the stomach. The occurrence of gastric ulcers, so frequently observed in the course of pulmonary tuberculosis and bronchial difficulty, may be due probably to embolism of the pulmonary veins; while their frequency in chlorotic and hysteric patients may be ascribed to fatty degeneration, and subsequent occlusion of small arterial gastric branches.

Many patients positively ascribed as cause and commencement of their troubles, injuries received in the region of the stomach, or violent vomiting. In such cases, very probably, sanguineous extravasation deposited in the upper layers of the mucous membrane interfered, by its pressure, with the circulation, rendering the part liable to self-digestion. This view agrees with ROKITANSKY's doctrine of the origin of the gastric ulcer from hemorrhagic erosions. Corrosive remedies, finally, may lead to the same result. The occurrence of the ulcer in the neighborhood of the pylorus, where the secreting follicles are most abundant; the fact that ulcers of the duodenum, identical with the gastric ulcer, are not observed beyond the line where the alkaline secretions of the liver and pancreas commingle with the chyme; points to another important element in the etiology,—namely, the amount of pepsin and acid present in the gastric contents. When the mucous membrane of the stomach has been injured, ulcers will follow the sooner, the more rapidly and extensively, the greater the disproportion between the acid juice and the bulk of the blood circulating in the arteries of the stomach by which it can be neutral-

ized. This also favors the occurrence of these ulcers in anæmic persons. The great excess of acid in rum-drinkers explains their frequent liability to gastric ulcer.

The secretions and ingesta of the stomach are of greater importance, however, regarding the growth of the ulcers, than their origin. The richer in pepsin and hydrochloric acid the gastric juice is found, and the less it is called upon to digest protein substances, and the greater the amount of acid generated by abnormal fermentation, starch, sugar, spirits, or fatty food, the more rapid is the growth of the gastric ulcers.

The action of the gastric juice upon the ulcer explains the character of the pain accompanying the disease. It increases after the ingestion of improper food, also in that position of the body which makes the ulcer the lowest point in the organ, so that the gastric contents may there collect. The pain, too, experienced by many persons subject to the disease, when the stomach is empty and the gastric juice has nothing to act upon, is thus explained. The ingestion of milk or animal food relieves this pain.

Gastric ulcers would undoubtedly be placed in the most favorable condition for cure, if the contents of the stomach could be kept neutral by the continued introduction of alkalies. But this would render the assimilation of albuminous substances impossible, and interfere most seriously with the patient's nutrition. Frequently, however, it becomes necessary to employ carbonates to partially neutralize an excess of acid.

Milk and albumen (eggs) possess a doubly favorable effect in this disease. They act directly as alkaline solutions, neutralizing acid, and in addition absorb a portion of pepsin and hydrochloric acid in the conversion of their albumen (alkali-albuminate) into acid-albumin and pepton. They deflect digestive action from the body of the ulcer. Blood and blood-serum would act similarly. This is confirmed by the experience of BAMBERGER, that gastric hemorrhages are frequently followed by relief; a fact also observed by the author. Meat also acts favorably, in one direction at least, by engaging the digestive action of the acid juices.

To cure a gastric ulcer, therefore, it is necessary, in the first place, to liberate it as much as possible from the self-digestive action of the gastric juice, by as nearly as possible an exclusive *milk, egg, and meat diet*, and the avoidance of starchy and saccharine food, which give rise readily to acid formations. The former articles should be taken in moderate quantities, *frequently*, in order to obtain their favorable effect uniformly and continuously. The introduction of large quantities of food, and those giving rise to flatulency, must be avoided, not only because the expansion of the fundus of the ulcer causes pain mechanically, and danger of perforation, but also increases the surface liable to be attacked by the action of the gastric juice. In cases where, in spite of these precautions of diet, gaseous formation in the stomach occurs, charcoal internally, and cold applications externally, are of excellent effect. This diet, the continued use of which may be rendered more bearable by allowing the patient in addition *small quantities* of wheaten bread, well-boiled carrots, turnips, etc., or stewed fruit, will place the ulcer in a favorable condition for cure. [Oysters, which in this country constitute a common food, may be added to the list.] If the patient perseveres, this diet alone is often sufficient in the course of a few months, to lead to a cure. The pain generally soon subsides, the weight of the patient increases, and finally the soreness in the region of the stomach, so frequently found just under the ensiform

process, disappears. In many cases, however, diet alone, or in conjunction with one or the other remedy, does not relieve the patient at once, and only after the use of a second or third remedy, with a continuation of the diet, we find a complete cessation of the pains,—a sign that the extension of the ulcer is arrested, and an indication for the continuance of the remedy used, and of the diet.

The use of narcotics, especially of morphia, for the purpose of alleviating the pain of gastric ulcers, as recommended in many text-books, is opposed by Professor GERHARDT. Often it gives no relief at all, and where it does, it is only for the time being, and tends to delude the patient regarding the seriousness of his condition, rendering him careless of his diet. To check violent vomiting morphia is often needed, and best applied subcutaneously; but to arrest the pain of these ulcers, astringents act as better narcotics than all proper narcotics of the pharmacopœia; this is true particularly of chloride of iron, nitrate of silver, and subnitrate of bismuth. The first has the decided advantage of not precipitating the peptones, and thus it interferes less with digestion. Its effects are especially favorable in debilitated patients and after hemorrhages. It should be taken diluted in water, and while the stomach is not entirely empty; when the seat of the ulcer has been positively recognized, the patient should for some time after taking the medicine assume a position in which the contents of the stomach may gravitate to the ulcer. When nitrate of silver is used, 1 grain per day in solution or pill-form is sufficient. Of bismuth 6–10-grain doses are not too large. In anæmic persons who frequently do not bear milk well, at first, the use of pepsin may be necessary.

Carcinoma of the Stomach.

Dr. J. W. DORA, of Mattoon, Illinois, gives, in the *Chicago Medical Journal*, for March 1st, 1868, a history of the symptoms and the autopsical developments in a subject of carcinomatous affection of the stomach.

Philip Crow, æt. 51; farmer and trader; robust, healthy constitution; bilious lymphatic temperament; weight, ordinarily, 175 pounds; height, five feet nine inches; habits of life active. He first began to complain of gastric irritation early in September last, but he had felt some dyspeptic symptoms for some three years previous, but paid no attention to it, attributing it to his irregular habits in eating; as he was almost constantly travelling by railroad back and forth to New York with stock, and eating hasty railroad meals, and losing sleep. During one of his visits East, in early autumn, he was attacked with pain in the stomach, nausea, and vomiting, which continued for several days, and was treated by some physician in the city of New York for gastralgia, and received temporary benefit. But not wishing to give a lengthy detail of the progress of the case, I will simply state that I learned from the patient, during my first visit to him, on the evening of November the 22d, that from the time that the gastric disturbance began in September, he had constantly experienced a gnawing pain in his stomach, when empty, and a dull, heavy, aching pain after meals even of the lightest character, and, also, a very noticeable but marked feature in the case was a continuous pain, extending from the stomach to the left side of the chest and shoulder, so much so that the left arm became very lame. This symptom induced me, at first, to diagnose the case as neuralgia, and prescribed accordingly. There was also a peculiar capriciousness of the appetite, even while the patient was able to attend to business, and travel about, the peculiarity of which was a constant tendency to change

diet, not relishing any dish more than two or three times in succession. The symptoms continued without any marked change, except the continued decline and emaciation. The tongue heavily coated with a yellow coat, and bowels obstinately constipated all the time; pulse ranging from 80 to 90; skin cool; no headache during any of the time, and free from pain in any part of his system, except the stomach and left chest.

About the expiration of a month, the emaciation enabled the discovery to be made of a distinct tumor in the epigastrium, hard and resisting to the touch, with considerable tenderness and an undue prominence of the liver. Died from inanition, February 19th.

Post-mortem.—The entire tissue of the stomach was one scirrhus mass, involving all its coats on the posterior surface. It was nodulated and perforated in several places, yet the orifices were comparatively healthy. Neither the cardiac nor the pyloric were obstructed or constricted in appearance, that we could detect, but the calibre was very much lessened, especially in its longitudinal aspect; in fact the entire organ was contracted to about one-half its normal dimensions. And there was one other peculiarity discovered, viz., there was upon the entire tract of the small intestines, as well as throughout the foliæ of the mesentery, small tuberculous-looking bodies, as large as a split pea, of a yellow color, which, I believe, have been named by some writers embryo cancers, or scirrhus lymphatic glands. The diaphragm and peritoneal lining of the upper part of the abdominal cavity were also thickly studded with these cancerous growths, if such they were. We were not permitted to remove any portion of the diseased tissue for microscopical examination, as we should like to have done, as it had been requested by the patient that no portion of his tissue should be removed from the body. It is remarkable that any human being could have survived so long, with such an entire arrest of nutrition, and such extensive lesions of the digestive apparatus, as existed in this case. But it may be attributed, in part, to the principle of vital tenacity, which we find very strongly marked in some cases, together with the small amount of nutrition derived from the milk diet, taken during the last two months of the patient's illness.

Case of Biliary Calculi.

In the *Chicago Medical Examiner*, for May, 1868, Dr. R. DUNLAP, of Waukegan, Wisconsin, says:

"Was called on Saturday, March 14th, to see John H. F., who had been taken sick on the 11th with bilious colic; had been in great pain through the bowels, attended with vomiting large quantities of bile for three days, without any passage from the bowels. The pain had left, but there was vomiting of a dark brown color every time any fluid was taken, but in small quantities and without any great effort. There had not been any cramping or straining. Pulse 97, and no fever or inflammation; tongue of a thin brown color; skin cool and a little moist; some soreness and tenderness over the region of the stomach.

"A varied treatment was employed, the patient dying on the ensuing Thursday.

"*Post-mortem.*—Found the bowels empty, excepting a little fluid; saw where the stricture had been; some little mortification; the liver somewhat enlarged; and in the gall-bladder were 142 stones, from the size of a hickory nut to that of a small pea, all weighing one ounce.

Colica Pictonum—Alcohol its Exciting Cause.

Dr. AMOS SAWYER, of Hillsborough, Illinois, states in the *St. Louis Medical Reporter*, for April, 1868, that alcohol is the exciting cause of this affection. He says:

"My attention was directed to this subject some years ago by the following circumstance: During the year 1851 an acquaintance, residing at Brookline, Mass., while mixing a glass of brandy, was surprised, upon adding water, to see the mixture assume a dark color. Attributing it to the liquor, he opened a new bottle, filled a clear glass, but with a like result. I would here state that the whole family had been quite unwell for some time—apparently nervous prostration; one member had a paralytic stroke; another, slight amaurosis; a third, hysteria; while all gave evidence that some mysterious agent was slowly but surely undermining their health. He, therefore, sent a sample to his family physician (Dr. Ware), with the request to have it analyzed. It proved to be caused by lead contained in the water, it having been conducted through lead-pipes.

"As usual, the members of this family had free access to the wine-cellar, and with the second meal wine was always served. One young lady, however, seldom drank liquor of any kind, and, although all the others suffered more or less from colic, she was an exception to the rule, never having been troubled in that way.

"This excited my curiosity, and I determined to investigate the subject. With this object in view, I have made it a practice to inquire of every painter I may meet, Have you ever known a *strictly* temperate man to suffer from lead colic? In every case the answer (after some deliberation, for the question seemed to take them by surprise), was, 'I have not.' In but one instance did I receive a *prompt* reply. In this case the gentleman—who owned a large shop in Boston—had, when an apprentice, some twenty years ago, observed that only those who indulged in *intoxicating* beverages suffered with colic; he had never drunk anything stronger than water, and so far had escaped. So fully convinced was he that it was owing to his total abstinence, that he considered it his duty to warn his workmen to be temperate if they would escape. 'There is no such thing as *lead*, but there is *rum* colic.'

"It was only last week I conversed with a very intelligent painter, recently from England. He could not recall a single instance where colic occurred in a temperate man. Although a stoutly temperate man is equally susceptible to lead poison, only he who indulges in intoxicating beverages is in danger of or succumbs to lead colic."

Stercoraceous Vomiting for Seventeen Days.

In the *London Lancet*, for February 29th, 1868, p. 284, F. H. MOSES, M.R.C.S., reports a case of stercoraceous vomiting, which continued seventeen days, and terminated in recovery.

Annie D——, aged thirty-nine, had five children, all living and in good health. Complexion florid; spare habit. Has never suffered from any serious illness before, but has occasionally for the last two months complained of pain at the epigastrium, and been in the habit of reclining in the afternoon, which appeased it. Was treated a fortnight previous to the attack for a "sore-throat," which soon yielded to simple measures. Vomiting commenced on September the 2d, the

matter ejected being of a bilious character. An aperient was ordered, and an effervescing mixture to be taken every three hours. Vomiting recurred every three or four hours during the day and night. Tongue coated with a yellow fur; pulse 80; soft and compressible.

September 4th. Vomiting still continues, but the matter ejected has assumed quite a different character, being distinctly stercoraceous. Bowels have not acted; tongue furred and dry; thirst excessive. Had an enema of soap and water, which came away in about twenty minutes after it was administered, having hardened pieces of feculent matter floating in it. Rectum examined, but nothing unnatural observed. No pain elicited on pressure in any part of the abdomen, and its several regions healthy on percussion. Five minims of liquor of hydrochlorate of morphia to be added to each dose of the mixture.

5th. Vomiting has been very excessive during the night, and about five pints of liquid feculent matter, smelling very offensively, is shown me. Pulse 90, of fair volume; skin moist; tongue furred; thirst excessive. Had another enema, which brought away hardened pieces of feculent matter, as previously. Vomiting recurs every three or four hours, and anything but the mixture is immediately ejected. To continue the mixture, with the addition of a minim of Scheele's hydrocyanic acid to each dose.

6th. Vomiting of a feculent character as before, continued during the night. Feels much exhausted; appearance little altered; tongue dry and furred; thirst excessive. Feels vomiting excited if pressure is made in the region of the descending colon. Vomiting continues through the day. An enema, containing an ounce of castor oil mixed with a pint of warm gruel, administered, which brings away similar pieces of hard feculent matter. To continue mixture.

7th. Vomiting continues; about seven pints ejected in the twenty-four hours, distinctly stercoraceous and very offensive. No pain; abdomen normal in appearance and on percussion, as previously; no intussusception, stricture of bowel, or hernia exists. To go on with the medicine; to have enema repeated, which comes away in about a quarter of an hour after it has been administered, but no feculent matter.

8th. Passed a fearful night, as she expresses it; vomiting every two or three hours, and its character as usual. Pulse 90, of fair volume; general appearance good; skin moist; tongue dry and furred; thirst excessive. To go on with the medicine.

9th. A similar state of symptoms generally, vomiting recurring every three or four hours. To have another enema, which comes away unaltered; to continue mixture.

10th. Rambles a good deal, and appears in a semi-comatose condition at times, which she is soon roused from; pulse 100, of fair volume; skin moist; tongue dry; thirst excessive; no pain; abdomen as usual. To have half a grain of opium every four hours; omit the effervescing mixture.

11th. Passed a restless night, vomiting matter of the same feculent character every three or four hours. Pulse 110, and has become weaker in volume. To have a tablespoonful of brandy every four hours, and beef-tea *ad libitum*.

12th. Vomits still, and beef-tea and brandy ejected. To have a mixture composed of valerian and camphor, every dose of which she vomits. Pulse 120, becoming thready; thirst excessive; countenance sunken; expresses herself as feeling more comfortable.

13th. Vomits still; pulse very thready, 125; countenance much sunken; thirst excessive; tongue dry and furred. To continue the opium pill every five hours.

14th. Vomits from five to six pints of feculent matter in the twenty-four hours. Is very feeble, and gives up all hope of recovery; pulse 130, feeble; other symptoms as before.

15th and 16th. Remains as previously, very weak and almost unconscious; pulse hardly perceptible; no pain (as at first) on manipulating or percussing abdomen, and it is perfectly normal in appearance.

17th. As before; if any change, still weaker; vomiting still continues. To have one-fifth of a grain of nitrate of silver and one-sixth of a grain of muriate of morphia in a pill every three hours.

18th. Vomits in the evening, but less in quantity than before, and very little during the night.

19th. A shade better; has had no return of vomiting.

20th. Copious action per rectum similar to the vomit in appearance; bowels act two or three times daily; pulse is improved. Feels much better, and can rest comfortably at night.

Has since gradually gained strength, and on the 30th was quite convalescent.

Burton-on-Trent, October, 1867.

Fatal Hæmatemesis.

Dr. WALTER D. JONES, M.R.C.P., of London, makes, in the *London Lancet*, for February 29th, 1868, p. 284, the following statements in reference to a case of fatal hæmatemesis, with a remarkable patent condition of the gastric bloodvessels.

A. B——, aged fifty, was taken early in January of the present year with vomiting of blood, voiding of bloody stools, and a sense of heat in the region of the stomach, with sickness, but without pain on either side, shoulder, or stomach. On pressing and examining the region of the liver, no pain was produced, nor any enlargement felt. The stools were said to have been bloody for many months past, although there were no hæmorrhoids; but the hæmatemesis is only of a recent date, and was only occasional. The blood vomited was of a grumous, half-digested appearance. Appetite quite gone. Pulse 90, regular, but soft and languid. Anæmia and great prostration of strength were present; the face was pale, with a tinge of red on each cheek. The action of the heart was quite regular and healthy. There was œdema of the ankles, and the countenance was anxious.

The symptoms were relieved by treatment; but on January 30th he died suddenly, with a slight convulsive struggle. During this interval the bloody vomiting ceased for three days, but the bloody stools continued. The patient had served at Hong-Kong twenty-five years ago, and was invalided home with ague and dysentery, which continued for some months after his return.

The post-mortem examination was made on February 2d. Upon removing the sternum, and examining the cavity of the chest, the lungs were found to be in a healthy state. The chest appeared, however, rather contracted, and not well developed. Several ounces of fluid serum were found in the cavity of the pleura; more fluid than usual was found in the pericardium. The exterior of the heart was in a perfectly healthy state, and upon the most minute examination the heart was found to be perfectly healthy and sound in every respect. When the abdomen was

opened, the intestines were much inflated with air, and a considerable quantity of serum was found in the cavity of the abdomen, and some slight adhesions between the peritoneal coverings—not unusual. The liver showed very great derangement; it was of a very pale-yellowish color, much smaller than usual; its exterior was rough, hard, exhibiting a granulated and cirrhotic appearance, with hardly any blood found in its substance; both lobes were diseased alike. The gall-bladder contained no bile at all, and was, like the liver, of a very pale color. To the feel, the liver was rough, tuberculated, knotty, and hard. The spleen was much enlarged, and of a very pale appearance, but not rough or tuberculated like the liver. Upon examination of the stomach, about forty-five ounces of coagulated blood were found contained in it. The exterior as well as the interior surface appeared free from disease; there was no ulcer or abrasion. There was no disease in either the cardiac or pyloric orifice; but the bloodvessels throughout the whole viscus were very much enlarged, some of them large enough to admit the point of the little finger.

It is evident that in this case life was sustained for a long time by the blood having been digested a second time, as it were, after it had passed once through the circulation, and returned once more to the stomach to endeavor to perform the same function with other food again. The cirrhosis of the liver had, no doubt, been coming on for many years, and most probably had its origin in the Hong Kong age twenty-five years ago.

(d) DISEASES OF THE URINARY AND MALE ORGANS.

Addison's Disease.

Dr. J. S. ADAMS, of San Francisco, records in the *Pacific Medical and Surgical Journal*, for May, 1868, p. 536, a case of disease of the supra-renal capsules and abscess of the left kidney. He says:

On the 6th of last December I was called to visit a married lady, 47 years of age, and the mother of several children. She gave the following history of her case:

Nearly fifteen years since, and a few months after the birth of her youngest child, she began to experience a feeling of lassitude after any physical or mental exertion, and at times an uneasy sensation in the region of the kidneys, and accompanied with a desire to pass urine frequently, which deposited more or less sediment. Menstruation regular, bowels slightly constipated, no feverishness, tongue clean and moist, appetite variable, but generally poor, and no emaciation. She also noticed that bronzed spots of a light brown color began to appear on the face, neck, and upper portion of the body. These spots gradually spread, until nearly the entire upper surface was covered. Has had no cough, pneumonia, or pleuritic inflammation to her knowledge.

Except the gradual spreading of the discoloration of the surface, and increasing debility, there was no material change in the symptoms until within the last two years. Medical aid and change of climate afforded no permanent relief.

Within the past two years she commenced having pain and tenderness across the loins, which steadily increased; also noticed a tumor in the left side, which could be perceived below the lower edge of the ribs, and slowly increased in size. This apparent enlargement of the spleen was very tender to the touch, and most

of the time quite painful. For some time past this pain has considerably increased, and at times been accompanied with gastrodynia, nausea, vomiting, and chills.

When called to see her, the face, neck, upper extremities, and body presented a bronze appearance, of a light brown color, with patches of a darker color; pulse 70 and weak, tongue moist and clean, bowels constipated, great tenderness over the loins, and also the tumor extended to the iliac region. The urine, which she was obliged to pass frequently, was small in quantity, contained considerable pus, and had an acid reaction. The menses had ceased only two months before. She was very much emaciated, took but very little nourishment, and suffered constant pain, unless under the influence of opiates.

From this time until her death (two months after) the pain in the left side increased, and nausea and vomiting became more constant. The desire to pass urine returned less frequently, and the amount of pus discharged with it gradually decreased until a few days before death, when it could not be detected.

Autopsy.—The surface of the body presented the appearance before described; the left kidney was nearly eight times its normal size, extended down to the ilium, had strong adhesions to the parietes of the abdomen and adjoining viscera, and its capsule was obliterated—at least no traces of it could be found.

On making an incision into the kidney, the whole structure, except a thin cortical portion, was composed of cysts filled with pus. The function of that organ was evidently destroyed and the ureter closed, as its pelvis contained nothing but pus. The right kidney was a little enlarged, its capsule about the size of a hickory-nut, and filled with deposits of a strumous character, partially broken down. The spleen was normal in size, but its structure so much softened as to resemble a mass of jelly. Both lungs were firmly attached to the pleura costalis nearly their entire length; their apices filled with deposits partially or entirely softened; also tubercular deposits were found scattered through their entire structure.

There was no organic disease of the heart, stomach, or bladder. The adhesions evinced that there must have been a low grade of inflammatory action going on for some time previous to death.

There was sufficient organic disease to produce death independent of diseases of the supra-renal capsules; yet from the symptoms presented from the first, I think it may be considered a case of Addison's disease, and the pathological conditions of the other organs simply the consequence.

Case of Addison's or Bronzed Disease.

Dr. A. YOUNG, of Prescott, Ill., reports in the *Chicago Medical Examiner*, for January, 1868, p. 5, the following case of Addison's Disease:

"Rev. Mr. R., aged forty-six, had for several years suffered from ill health, which was, however, not sufficient to interrupt his professional duties, except by brief intervals. As there was evidence of tubercular deposits in both lungs, his ill health was attributed to this cause. Last winter his general health began to fail; there was some disturbance of the digestive organs, but no apparent increase of the disease of the lungs. About the same time, the skin of the face, neck, and hands, which was naturally rather dark and sallow, began to assume a darker hue, and eventually became as intense as that of a jaundiced person, except that the hue had not the yellow tinge of jaundice, but more nearly resembled a person

deeply tanned by exposure. The debility increased, until he was obliged to relinquish his occupation, but was able to be around, complaining of nothing but extreme lassitude and weakness, till September 16th, when persistent nausea and vomiting, with increase of prostration and faintness, supervened, continuing till his death, which occurred September 23d.

"A post-mortem revealed crude tubercular deposits in apex of both lungs; some fatty degeneration of heart.

"Abdominal viscera presented nothing worthy of note, except kidneys, and supra-renal capsules. Left kidney healthy in structure, with the exception of a small tubercular deposit. Left supra-renal capsule filled with crude tubercle. The natural texture of the right kidney and supra-renal capsule entirely destroyed, its place being filled by a soft pulpaceous mass, undoubtedly softened tubercle.

"There was nothing to indicate renal disease, the urine being normal in quantity and quality."

(c) EXANTHEMATOUS DISEASES.

Treatment of Small-Pox.

Dr. AQUILA SMITH, King's Professor of Materia Medica, in Trinity College, Dublin, etc., writes to the *British Medical Journal*, for April, 1868, p. 346, the following article on the treatment of small-pox:

In the *Life of Sydenham*, prefixed to Dr. Latham's translation of his works published by the Sydenham Society, a very candid and impartial account is given of the "cooling treatment of small-pox" by the great physician of the seventeenth century, of whom he says: "The change that Sydenham introduced was not the change from one extreme to (comparatively speaking) another; but rather a *media via* between two contrasting methods—the method of promoting the eruption by blankets and brandy, and the method of replacing it by bloodletting and purging. Sydenham's method was really, in the eyes of its author, a *golden mean* between the cordial system and the evacuant system." (*Life*, p. lxviii.)

In the letter of Dr. J. Crane, of Dorchester, reprinted by Dr. Latham from the *Gentleman's Magazine* of July, 1790, the writer alludes to Sydenham's letter addressed to Dr. Cole, of Worcester, in 1682, and says: "Now, I shall take leave to go further back, and affirm that even Dr. Sydenham was not the first who pointed out the cool regimen in the small-pox, but that the mode of treating the disease was known to, and practised by, an ancestor of mine, born fifty-three years before Sydenham, of whom some mention is made in the *Life of Lord Clarendon*. This person, by name John Crane, was my great-great-great-grandfather, and practised at Cambridge, where he died in 1652, aged eighty-one years." "To preserve the claim of my reverend forefather to the merit of being the first who systematically pursued the cool regimen in the small-pox, I request your insertion of this in your valuable repository; for though tradition has handed down the fact, it will otherwise insensibly fall into oblivion, as there are no printed documents extant to prevent its sharing that common fate." (*Life*, pp. lxx, lxxi.)

The object of this communication is to show that, "though tradition has handed down the fact," there is printed documentary evidence extant, from which it appears that some of the most important principles "of the cool regimen in small-pox" were "pursued" as far back as the year 1584; at which period John Crane, of Cambridge, was only twenty-seven years old.

The book from which I am about to quote was written by Scévole de Sainte-Marthe (*Latine*, Sammarthanus), in 1584, as appears from the date of his letter on presenting his Latin poem, *Pædotrophia*, to Henry III of France. The full title of the poem, is, *Pædotrophia, seu de Puerorum Nutritione*, libri iii. The third book treats of those diseases, eighteen in number, to which children are subject soon after their birth; but, as it would occupy too much space to give an analysis of this remarkable poem, written in excellent Latin, by a distinguished Frenchman, who was not a physician, I shall quote only certain passages relating to the treatment of small-pox.

Sainte-Marthe describes two forms of the disease (Edito 1698, p. 109):

"Nam geminæ morbi (quanquam discrimine parvo)
Sunt species."

He recommends frequent draughts of cold water until vomiting is excited.

"Continuò insensos avertere profuit æstus
Porrectis gelidæ rivis, quæ frigeret intus
Viscera, sed primo vix id contingat ab haustu.
Ergo redintegrant lymphas, vomituque frequenti
Efficiunt, ne fortè novo nen usque liquori
Sit locus, et pota repetito incendia sedant." (P. 112.)

He recommends also a regulated diet along with purgation by manra or cassia, which medicines, in the case of a young child, may be taken by its nurse.

"Additur et victûs ratio: nam dulcior vitant,
Fruetûsque; immodico quicunque humore putrescunt,
Tum Syrio rore, aut cassia medicata propinant
Pocula, quæ invalidi nutrix vice sumat alumni." (P. 113.)

He was aware of the great danger of attempting to drive out the disease.

"Tantùm hoc moneo ne publicus error
Te teneat, qui non fallit muliebria tantùm
Pectora, verum ipsos etiam plerunque medentes;
Omnia dum faciunt ut quantuncunque veneni
Intus inest penitus se in apertas proferat auras.
Quippe adeo plena ingentis res illa pericli,
Erumpat ne vi nimia, nec in extera tantùm
Æviat effusæ largissîma copia pestis:
Verùm ipsas etiam numeroso vulnere fauces
Occupit, obæssæque animæ spiracula claudat." (P. 113.)

If he apprehended retrocession of the eruption, he would dare to bleed.

"Ne loca jam erumpens revocetur ad intima virus,
Ausim equidem ægroti salientem incidere venam,
Humorisque aliò nonnullam avertere partem." (P. 114.)

In order to expel the morbid humors by sweating, he recommends:

"Natura juvenanda est
Auxiliis, terra alma sinu quæ divite promet
Plurima, teque adeò ante omnes quæ nomen ab ulmo
Herba capla, veterum priscis ignota parentum
Temporibus, nostri decus et nova gloria smelli
Insita quippe tuo vis admiranda liquori
Sudorem elicere immundum, fœdamque soluto
Corpore contagem aërias educere in auras." (P. 114.)

To promote the exfoliation of the crusts, which he compares to the falling of leaves in autumn, he recommends fomentations of roses and myrtle.

"Atque oleo ceruse illeveris omnes,
Illece has toto de corpore sentiat infans
Effluere, et toto sparsas horrescere lecto." (P. 117.)

I do not know of any application so effectual in relieving the itching of the face, which is so distressing to the patient in small-pox, as a mixture of one part of solution of subacetate of lead with seven parts of olive or almond oil, applied by means of a feather or soft brush.

The *Pædotrophia* passed through ten editions during the life of the author, and many subsequent editions; it was translated into French, both in prose and verse, and there are two translations into English verse; yet, with all this publicity, I do not find in Moore's *History of the Small-pox* any mention of Sainte-Marthe, nor is his name to be found in the bibliography appended to the article "Small-pox," in the *Cyclopædia of Practical Medicine*, or in Copland's *Dictionary of Medicine*.

Cases of Scarlatina, with Tables of Temperature and Pulse Range.

Dr. HALL CURTIS, of Boston, communicates to the *Boston Medical and Surgical Journal*, for December 26th, 1867, the following cases:

CASE 1.—G. A., boy 9 years old; severe initiating symptoms. Recovery gradual. See Table I. (Hours of observation, 9 A.M. and 5 P.M.)

1st CASE—G. A., 9 years old. TABLE I.												
	5th day.		6th.		7th.		8th.		9th.		10th.	
	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.
Temperature,	100	98	98	98	99	99	99	100	98.2	102.5	100	98.5
Pulse,	100	100	98	84	88	84	92	88	88	92	96	72
											76	88

CASE 2.—H. A., brother of the above, 7 years old; seized three days after his brother. Health generally below par. His case was quite similar to his brother's, but more tedious, with bronchial complications. Table No. II, gives his temperature and pulse range. Both of these cases had albuminous urine to slight extent, but no pullback in their recovery,

2d CASE—H. A., 7 years old. TABLE II.												
	2d.		3d.		4th.		5th.		6th.		7th.	
	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.
Temperature,	103	100	99.3	99.3	99.3	100	99	100	100	100	99	99.3
Pulse,	132	136	140	128	120	116	108				96	92
											104	96

CASE 3.—Tim, 2 years, 8 months. Commenced to complain of nausea and vomiting, with fever, on Friday night, November 1st, 1867; also of sore throat. On Sunday, a rash appeared. Monday morning, when I first saw him, he was looking bright; skin hot and covered with punctate rash, most marked on anterior aspect of body, especially about loins and abdomen. Right side of tongue studded with aphthæ; tongue itself bright red at tip, and on its under surface; papillæ projecting through the white coat covering the rest of it. He was kept in bed; fresh air; light diet; lemonade and chlorate of potash drinks; with lard inunction. Slept heavily during afternoon, awaking bright and cooler; quiet; head and cheeks

less flushed. He continued to improve; on Thursday was up and about the room. Desquamation did not commence till the 10th of November. Table No. III gives the temperature and pulse range of this patient.

3d CASE—TIM, 2 years, 8 months.—TABLE III. Convalescent 6th day.

	3d.		4th.		5th.	
	M.	E.	M.	E.	M.	E.
Temperature,		101.5		98.5 100		98
Pulse,		152		120 128		108 120

CASE 4.—Maggie, 5 years old, sister of the above, never a strong child, with black hair, thin face, black sunken eyes. "Troubled with worms" and frequently with diarrhoea; fond of school and her books. Complained Monday, November 4th. Skin then hot; face flushed; tongue and fauces bright red, but no other change in fauces. Skin efflorescent in scattered patches, especially at bend of knee. This case assumed a papular and vesicular form, patient frequently complaining of headache, generally frontal; conjunctivæ yellow. The seventh day of her illness her face perspired freely; rest of body hot and dry. Next day there was epistaxis; neck desquamating, face hot. Trunk desquamating following day, the ninth day of illness. Desquamation became general except on the face, which did not visibly desquamate. Angina in this case slight.

Table IV gives temperature and pulse range of this case.

4th CASE—MAGGIE, 5 years. TABLE IV.

	1st.		2d.		3d.		4th.		5th.		6th.		7th.		8th.		9th.		10th.	
	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.
Temperature,	103	101	103.5	100.5	102.8	99.8	101.2	100.6	101	106.8	106.8	106.8	99.6	101	99.6	98.7				
Pulse,	140	116	130	120	128	112	128	124	120		140	128	116	120	108	100				

CASE 5.—Sarah, another sister, age 7 years; was taken Wednesday the 6th; going on comfortably, with eruption and angina. Desquamation of face commencing the 5th day of illness; same papular and vesicular form as preceding case.

Table V gives temperature and pulse of this case. Albumen was not detected in these cases.

5th CASE—SARAH, 7 years. TABLE V.

	1st.		2d.		3d.		4th.		5th.		6th.		7th.		8th.	
	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.
Temperature,	100	98.9	101.4	100.4	101.4	99.5	101.8	99.8	101	98.8	99.6	99	98.8			
Pulse,	120	130	140	120	136	120		108	124	100		84				

I would mention the peculiar nauseous odor proceeding from the bodies of the girls, a peculiarity unmentioned by Bouchut, Condie, West, Barthez, and Rilliet, Graves, Aitkin, Watson, Valleix. Dr. Heim, of Berlin, mentions that the odor in rubeola or rôtheln is stronger than that which scarlatinal patients emit.

The mother was taken Wednesday afternoon, November 6th, with severe inflammatory angina, increasing during the next three days; glands under and behind lower jaw much swollen, and very tender; voice nearly lost, jaw almost immovable. Right tonsil having diphtheritic-looking patches, which extended slowly on gland. Three leeches to each side of neck, and poultices, gave great relief; wine; tincture of muriate of iron; insufflation of alum; chlorate of potash drink, meat broths, as treatment. Recovered rapidly.

The *father* was taken, on the 16th, with severe tonsillitis, but in three days was out, having used only domestic remedies.

The mother and the three children all presented at the angles of the mouth, irregular, ulcerated fissures, with grayish aspect, of suspicious appearance, but no specific history.

OBSTETRICS

AND

DISEASES OF WOMEN AND CHILDREN.

I. OBSTETRICS.

Abortion.

At a meeting of the Medical Society of the County of New York for February, 1868, reported in *The Medical Gazette* for that month, Dr. Fordyce Barker read a paper upon "Abortion," with particular reference to the formulation of the rules of practice in its prevention, management, and treatment. The causes of abortion he classified as, First, accidental; including all causes by which the ovum is suddenly detached from the uterus. Second, constitutional; including all forms of toxæmia, such as exanthemata, uræmia, or syphilis. Third, diseases of the uterus; which prevent the simultaneous development of the uterus and the ovum, such as displacements, chronic inflammation, induration, tumors, etc. Fourth, diseases of the ovum, primarily affected with pulmonary, cardiac, or other diseases; hydrocephalus, including under this head diseases of the cord and of the placenta. He next spoke of the signs of abortion at different periods. In abortion due to accidental causes, generally no symptoms occur for eight or ten days, or perhaps even three or four weeks after the death of the ovum. On the contrary, when the abortion is due to constitutional causes, the death of the fœtus is generally announced by disturbance of the mother's health, such as lassitude, anorexia, pain in the loins, flabbiness of the breast, etc.; the movements and sounds of the fœtus are of course absent. The prognosis in abortion in the first or second months is not grave, but is much more so in the third or fourth, especially in the accidental variety of abortion, and particularly those caused by criminal means. Tardieu reports thirty-four cases of criminal abortion, with twenty-two deaths. The dangers from hemorrhage may be either from a sudden gush, or a continued leakage or recurring hemorrhages due to retained placenta or membranes. From the same cause may arise peritonitis, septicæmia, etc. Other results are moles, subinvolution of the uterus, and sterility. As compared with delivery at full term, abortion may not be immediately so dangerous, but is later much worse. Dr. Barker thought that if cases of puerperal fever in hospitals were excluded, he had seen more deaths from abortion than from delivery at full term.

As regards the preventive treatment, he had little faith in measures directed against plethora and nervous irritability, considering these to be rather secondary than primary manifestations. To toxæmia and chloro-anæmia, he attaches more importance. He very generally directed exercise in the open air, with good diet,

mild stimulants, and tonics where necessary. These, with the confidence of hope, will often bring a pregnancy to a happy termination after repeated abortions. In one drug he has great faith, namely, the chlorate of potash. It was first suggested by Sir James Y. Simpson, on the ground that its oxygen-producing power would be beneficial in fatty placenta. Whatever might be the truth of this chemical theory, clinical experience has convinced Dr. Barker of the value of this remedy. Patients themselves notice its effect upon the movements of the foetus. He relates several remarkable cases of success with this remedy after repeated abortions.

The prophylaxis of abortion from syphilis is easily understood, the difficulty lying in the fact that often the father may show no sign of syphilis, and yet infect the foetus.

Our knowledge of the diagnosis of diseases of the ovum is so slight, that nothing can be said of the prophylaxis of abortion from the cause.

In treating an abortion that has already begun, we are justified in considering it as still preventible if the cervix still retains its normal length, shape, and hardness. The treatment then should be, 1st, absolute rest of body and mind; 2d, opium, given by choice per rectum, either as a laudanum injection or a suppository. Gallic acid and acetate of lead may also be of some value. While you still have hope of preventing the abortion, never use the tampon. If the soft cervix and projecting ovum show the abortion to be inevitable, the indication is to complete it as rapidly as possible. Both opium and ergot are likely to prove hindrances, the former by preventing contractions, the latter by contracting the os. If the hemorrhage is profuse before the third month, tampon the canal of the cervix with compressed sponge. This can best be done by the aid of the speculum. The sponge tampon saves blood and dilates the cervix. At this early period there is no danger of fatal hemorrhage from filling of the uterus with blood. After the tamponing, give turpentine enemata. The ovum and tampon may be all expelled together. In the later months the best tampon is Barnes's dilator. No part of the ovum should be allowed to remain behind; its removal, however, should not be accomplished by instruments introduced into the body of the uterus. In the later months the placenta should be removed within six or eight hours, and can be best accomplished with the assistance of an anæsthetic.

Extra-Uterine Pregnancy.

Drs. STEPHEN ROGERS, and T. C. FINNELL, made a report to the New York Pathological Society, on a case of death from hemorrhage from a ruptured extra-uterine foetal cyst (*N. Y. Medical Record*, April 15, 1868).

The patient had suffered irregular menstruation, but had supposed herself pregnant about a month or six weeks, when, about two weeks previous to her death, her menses again returned, as was supposed, attended by an unusual degree of pain. She was suddenly seized with violent abdominal pains, and died, of apparent anæmia, twelve hours after the attack. The doctor saw her six hours before death, and was so impressed with the extreme pallor, depressed pulse, and other signs of the fatal bleeding so usual in extra-uterine gestation, that he asked if she had menstruated regularly, and received the above reply. The diagnosis was thereby obscured, and it was thought that a perforation of the intestine might

have taken place. Five pints of blood were found in the peritoneal cavity; the left Fallopian tube was the seat of two bulbous enlargements, one near the uterus, about the size of a small almond, the other at or near the fimbriated extremity of the tube, and about the size of a large plum. There was found a small perforation or rent in the walls of the smaller tumor, and a somewhat similar lesion upon the surface of the larger one. The left ovary contained a corpus luteum of recent date. The uterus was but slightly enlarged. The doctor remarked that it was believed that the fatal hemorrhage took place from the lesion on the surface of the larger tumor, which appeared more like a mass of coagulated blood than anything else, though it was not doubted that it had been the locality of an impregnated and developing ovum. The smaller tumor, he said, had been supposed to indicate the locality of the placenta.

The reporters say, as this woman had experienced the usual signs of pregnancy for several days, at least, we do not doubt that she had from the beginning to the end, the usual signs of extra-uterine pregnancy, viz.: First, those of pregnancy of the usual character; second, paroxysms of hypogastric, colicky pains, referred to the left iliac region, recurring at varying intervals, perhaps attended with nausea, and a feeling of debility; third, a sanguinolent discharge from the uterus, which we know she had; fourth, the uterus appreciably enlarged, which we see was slight only in this case; and fifth, more or less tenderness over the region of the abdomen corresponding to the pain (see Rogers's *Memoir on Extra-Uterine Foetation*, p. 35). We therefore regard it as a most unfortunate circumstance that the medical gentlemen in attendance in this case were unacquainted with these symptoms and facts belonging to the natural history of extra-uterine pregnancy, for they were in consequence entirely unprepared to find that "during one of the accustomed attacks of colic, or perhaps without it, the patient suddenly experienced an acute pang in the right or left hypogastric region, followed by depression, sickness of the stomach, collapse and pallor; by sighing and syncope, and feeble or absent pulse; that the abdomen became more or less enlarged, attended by a sense of fluctuation and probable dulness on percussion over the more depending portions. Indeed, they were in consequence, entirely unprepared to seek for these physical signs, and did not detect them. Had they been fully instructed on the subject we cannot doubt that the presence of blood in the peritoneal cavity would have been early detected, for it must have been there in considerable quantity, to account for the symptoms of hemorrhage said to have been present in this case. This failure naturally resulted in neglect to employ the only means offering any promise to save the life of this unfortunate woman, viz., *gastrotomy*, for the purpose of ligating the bleeding tissues, pedicle, or vessels, and the removal of the effused blood from the cavity of the belly. *Op. cit.*, p. 40. After a due consideration of the history of this case, the committee think that it presented most of the circumstances favorable to the success of this operation, and very much regret that so promising an opportunity to practise it was lost. We deem it of importance to comment upon the supposition entertained by the physicians in attendance upon this case, that a perforation of the intestine had taken place. This is a resort which physicians very unaccountably have too long practised, when placed under similar circumstances. We regard it as a pathological axiom that symptoms, such as this case presented, coming on suddenly in a woman whose health, up to the moment of their appearance, had been perfect, do not indicate perforation of the intestine and the escape of its contents into the peritoneal cavity; for such an acci-

dent must necessarily be preceded by other symptoms than those of perfect health. Op. cit., p. 37.

The only excusable mistake a physician could commit in diagnosing a case presenting such a history and symptoms, would be in taking them to indicate pelvic hæmatocele. This pathological condition, and hemorrhage from a ruptured foetal cyst, have been repeatedly confounded by diagnosticians of acumen. The differential symptoms, however, we regard as sufficiently distinct, if carefully observed, to enable the physician to avoid such an error. We subjoin a tabular statement of the symptoms of the two, for the purpose of ready comparison:

TABULAR STATEMENT OF SYMPTOMS.

<i>Extra-uterine Pregnancy.</i>	<i>Pelvic Hæmatocele.</i>
The usual rational signs of pregnancy are present.	Absent.
Paroxysmal, hypogastric, colicky pains are very commonly present from the end of about the first month, and when present, are always referred more to one iliac region than the other.	Are not generally present, but when they are, they are more diffused over the whole pelvic and hypogastric region.
Tenderness over the seat of pain is generally not marked.	It is extreme over the seat of pain.
Bloody discharge from the uterus apt to attend the colic pains, regardless of the menstrual period.	Not present except at the usual menstrual period.
More or less sickness at the stomach.	Sickness at the stomach.
<i>After rupture of the cyst.</i>	
Pallor, depression, and collapse.	Pallor, depression, and collapse.
Enlargement of the abdomen with little tympanitis.	Enlargement of the abdomen mostly tympanitic.
General dulness on percussion over the more depending portions, and fluctuation.	Local dulness on percussion, generally on one side, not influenced by the position of the body, and no fluctuation beyond the circumscribed dulness, and not often detectable even there.
No tumor or local enlargement during the early months can be distinguished.	Distinguishable tumor either in the iliac region, or in the pelvis, or both.
Uterus evidently enlarged, but not displaced.	Uterus normal as to size, but generally displaced in some direction.
Dysuria.	Dysuria.

Should the bleeding be intra-peritoneal, it is obvious that the local signs compared in this table must be the same in both extra-uterine pregnancy and pelvic hæmatocele, the only difference being in the early rational signs of pregnancy. But it is to us equally obvious, that so far as the treatment goes, it is a matter of no importance whence or from what cause the bleeding comes, providing it be into the peritoneal cavity.

The ligation of the bleeding vessels from the peritoneal cavity, and the cleaning out of that cavity, are unquestionably indicated in both cases.*

* I would here state my reason for omitting in my memoir to discuss the differential diagnosis between pelvic hæmatocele and rupture of an extra-uterine foetal cyst. The latter pathological condition, being

In conclusion, the committee would state that in their opinion, had the gastrotomy treatment been employed in this case as early as it might have been, the chances that it would have saved the life of the woman were as great, at least, as are the chances for recovery after an ordinary operation for extirpation of the diseased ovary.

On Turning in Labor.

In the *Cincinnati Med. Repertory* for April, Dr. T. NAGEL has an article on the proper methods of version.

For a long time, in abnormal positions of the fœtus, was the best method of turning a subject of dispute. Bringing the head down, and bringing the feet down, both had their friends; but latterly, both in this country and Europe, has it been decided that the former, in most cases, is the better. We have, however, even now, obstetricians who employ the latter mode; and it is strange with what pertinacity they adhere to it.

When there is hemorrhage and but slight contractions, and the volume of the uterus must be reduced as quickly as possible, and, indeed, in all cases, when rapid extraction of the fœtus is necessary, turning, by bringing down the feet, is preferable. But when these indications do not exist, and when there is no deformity of the pelvis, and turning is necessary, the other mode should be adopted.

Professor Lumpe, says, "that he who, on every occasion, introduces his hand into the uterus, seizes the feet, and brings them down, deserves as little the name of obstetrician, as he who has only one remedy for all diseases, and uses it under all circumstances, deserves the name of physician."

There are two methods employed in bringing down the head, and of course, in the different positions of the fœtus which render turning necessary, the physician must rely upon his own judgment which one he should make use of. In the majority of instances, we consider the mode first recommended by Dr. Autrepont the better. He advises that the hand which corresponds with the side of the mother on which the breech is placed should be introduced—the back turned towards the posterior part of her pelvis and the thumb, the front wall; and, in this manner, the breech of the child should be grasped. During the intervals of contraction, it should be raised carefully upwards and pushed towards the fundus of the uterus, and at the same time, the other hand manipulating externally, the head should be

one preceded and attended by symptoms of pregnancy so almost invariably, it seemed to me an unnecessary addition to the paper already very greatly extended.

In Dr. John Byrne's elaborate papers on pelvic hæmatocele, the following observation may be found in support of this decision, viz.: "A sixth class of hæmatocele comprises those cases in which the blood has been derived from a ruptured ovum, or a ruptured vessel in extra-uterine pregnancy. These cases constitute, in my opinion, a nosological species of their own, and can be properly excluded in a treatise on hæmatocele of the non-pregnant female."

The presence of the symptoms of pregnancy at the diagnosis can only indicate to which species any given case belongs; and as my paper was devoted to the accidents of pregnancy, the accidents of the non-pregnant state were excluded. The relation, however, of two interesting cases by Prof. Fordyce Barker, which had fallen under his observation, has convinced me that the discussion of this differential diagnosis would have added to the value of my memoir. I shall certainly add it in my republication of the paper. One of Prof. Barker's cases was an unmarried and unsuspected female, who died of *supposed* pelvic hæmatocele, but who was really the subject of an extra-uterine pregnancy. The other a married woman, who was *thought* to be the victim of extra-uterine pregnancy, but who was in reality dying of pelvic hæmatocele.

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made to move downwards. Sometimes considerable pressure is necessary to bring the head into the cavity of the pelvis. After it has been brought about, it should be retained there until several contractions have taken place, when the case may be left to nature, as in any original head presentation.

Faradization in Inertia of the Uterus.

Dr. J. C. MÖBLEY, of Hernando, Miss., communicates to the *Richmond Medical Journal*, December, 1867, a case in which inertia of the uterus was treated by Faradization. Fluid extract of ergot (f3ss.) had been used without success. The application of one pole of the battery to the dorsal region, and manipulation of the surface of the uterus with the other, brought on vigorous action in fifteen or twenty minutes, and the labor was soon terminated. Inertia continued after the expulsion of the fœtus, and it was necessary to introduce the hand to remove the placenta. The uterus still failing to contract, the battery was again applied, and was followed by immediate contraction.

Postural Treatment in Prolapse of Funis.

Dr. BIRNBAUM (*Mon. f. Geburtshk.*) gives an historical résumé of the plan of replacing the cord by putting the woman in the knee-elbow position. He quotes Deventer, 1701; John Mowbray, 1724; Henry Bracken, 1737, and others, as having recommended this practice, and more lately, V. Ritgen (1848). As a pupil of Ritgen's, Dr. Birnbaum says he has often practised this method. He says: When a loop of funis is still high in the cervical canal, and the cervix scarcely admits the examining finger, it may be that the knee-elbow position is useful; but when the loop has once passed through the os uteri, whether head, trunk, or foot present, it will be vain to expect any good from this position. He remembers no case where manual aid was not also necessary, in addition to the knee-elbow or side position, to replace the cord or to extract the child.

Twin Delivery with Long Intervals between the Births.

At a meeting of the East River Medical Association of New York City, reported in the *Medical and Surgical Reporter*, January 4th, 1868, Dr. — O'SULLIVAN reported a case of twin delivery with an interval of sixteen hours, and total inaction of the uterus during the interval. Action was finally excited by the use of ergot, and resulted in the birth of a male child of large size, strong and healthy.

In the same Journal, February 1st, 1868, Dr. O. H. CHIPMAN, of Grand Rapids, Michigan, reports a case of twin births in which the interval between the birth of the children extended to *thirty-six* hours, and action of the uterus was then excited by the administration of ergot.

Placenta Prævia.

Dr. T. GAILLARD THOMAS, Professor of Obstetrics and the Diseases of Women and Children in the College of Physicians and Surgeons, New York *Journal of Obstetrics*, May, 1868, says:

"No variety of abnormal labor requires at the hands of the obstetrician more careful consideration, mature judgment, and prompt action, than that which is complicated by unavoidable hemorrhage. The placenta being attached so near

the os internum that the dilatation of this part necessarily involves its detachment, the very process by which the mother gives birth to her child, tends to destroy not only its, but her own life. Fortunately placenta prævia is not of common occurrence. Many a practitioner will pursue his vocation for years without meeting with a case. Yet so serious are its results that although it occurs not oftener than once in five hundred cases, which is the proportion computed as correct by some authors, it exerts a marked influence upon the statistics of obstetrics. According to the calculation of Sir James Simpson, based upon the analysis of three hundred and ninety-nine cases, one-third of the mothers and over one-half of the children are supposed to have been lost. The reasons for this great mortality are probably the following:

"1st. The dilatation of the cervix for the passage of the child unavoidably exposes both mother and infant to great danger from placental detachment and hemorrhage.

"2d. Repeated hemorrhages occurring during the ninth month, as the os internum dilates under the influence of painless uterine contractions, which then occur, the woman at the time of labor is usually exsanguinated, exhausted, and depressed both physically and mentally.

"3d. Profuse flooding generally occurring with the commencement of labor, the medical attendant is often not at hand, and reaches his patient only after a serious loss of blood has occurred.

"The dangers attendant upon the condition develop themselves most markedly in the first stage of labor, and death not infrequently occurs before the os externum is dilated to a size not greater than a Spanish dollar. At this time surgical interference, if resorted to to accomplish delivery, often destroys the lives which it is intended to save. The hand forced too soon through a rigid os will often rupture its walls, while a delay without the adoption of the means capable of controlling hemorrhage will necessarily favor the occurrence of a fatal result.

"On the other hand, should full dilatation of the os have taken place, and the patient be exhausted from sanguineous loss, the practice of rapid artificial delivery will not rarely be followed by fatal prostration.

"There is no question, in my mind, of the fact, that when it becomes the recognized practice to resort to premature delivery as a prophylactic measure in these cases, the statistics which have been quoted will be very much improved upon. By resorting to this measure we should be dealing with a woman who is not exhausted by repeated hemorrhages; the obstetrician would be in attendance at the commencement of the labor; and he would be able by hydrostatic pressure to control flooding, while the same pressure accomplished rapidly and certainly the first stage of labor.

"When this step has not been deemed advisable, or from any cause labor has absolutely set in complicated by unavoidable hemorrhage, there are two plans by which we may endeavor to save the lives of mother and child.

"1st. We may alter the state of affairs at the cervix so that dilatation may occur without hemorrhage.

"We may hasten the delivery of the child so as to render a *gradual dilatation* of the cervix unnecessary.

"The means at our command for accomplishing these indications may thus be tabulated and presented at a glance:

MEANS FOR PREVENTING HEMORRHAGE WHILE THE OS DILATES.

- | | |
|---|-------------------------------------|
| 1. Distension of cervix by bags of water. | 4. Complete detachment of placenta. |
| 2. Evacuation of liquor amnii. | 5. The tampon or colpeurynter. |
| 3. Partial detachment of placenta. | |

MEANS FOR HASTENING DELIVERY OF CHILD.

- | | |
|-------------|----------------|
| 1. Ergot. | 3. Forceps. |
| 2. Version. | 4. Craniotomy. |

Dr. Thomas gives eight cases in illustration of these remarks, from which we select two or three.

"CASE 1.—Mrs. W., aged twenty-six, primipara, in good health, was suddenly taken with hemorrhage three weeks before full term. She sent for me in great haste, but being occupied, I was unable to go to her, and she was seen for me by my friend, Dr. Reynolds. He discovered that she had lost a few ounces of blood, but that the flow had ceased. Three days afterwards she was again affected in the same way, the flow ceasing spontaneously. About a week after this she was taken during the night with a flow, which was so profuse as to result in partial syncope when she endeavored to walk across the room. I saw her early the next morning, found her flowing slightly, and upon vaginal examination succeeded in touching the edge of the placenta through the os, which was dilated to the size of a ten cent piece. Later in the day, Drs. Metcalfe and Reynolds saw her, and agreed in the propriety of premature delivery. In accordance with this consultation, at 7 P.M., I introduced into the cervix, with considerable difficulty and by the employment of some force, the smallest of Barnes's dilators. This in twenty minutes was followed by the next larger dilator, and in an hour by the largest. Dilatation was rapidly accomplished, but instead of removing the largest bag, I left it in the cervix until ten o'clock that night. Expulsive pains coming on at that time, I removed it, when the head rapidly engaged, and before morning Mrs. W. was safely delivered of a living girl. The placenta followed rapidly, and both mother and child did well.

"Remarks.—In this case, although hemorrhage continued slightly throughout the labor, it never amounted to a sufficient quantity to endanger the lives of either mother or child. The implantation of the placenta being lateral, cessation of the flow occurred as the head advanced and made firm pressure against the bleeding surface.

"As to the fact of the case being one of placenta prævia there could be no doubt. The placenta was distinctly touched by Drs. Metcalfe, Reynolds, and myself; one lip of the cervix was disproportionately developed, and the placental murmur was much more distinct over the symphysis than near the fundus.

"CASE 2.—Mrs. D., a lady over forty years of age, whose last pregnancy had been completed fourteen years previously, was placed under my care by Dr. Metcalfe. She was an excessively nervous and hysterical woman, but in good health. About three weeks before full term she was taken with hemorrhages, which lasted for very short periods, recurred at intervals of four or five days, came on without assignable cause, and ceased without remedies. The cervix was not dilated, and no physical signs of placenta prævia could be detected either by vaginal touch or auscultation. Dr. Metcalfe saw her in consultation, and as all the rational signs of placenta prævia were present, and our patient was suffering from the repeated

losses, and was becoming extremely nervous and apprehensive, we concluded to bring on premature delivery. Accordingly at 11 A.M., I introduced a large sponge tent into the cervix, and at 3 or 4 P.M., removed it, and succeeded in inserting Barnes's smallest dilator. At nine that night the cervix was fully dilated at the expense of very slight hemorrhage, and Dr. Metcalfe then being present, I removed the bag, intending to leave the case to nature, provided no flow occurred. Previously during the evening, upon changing the bags, I had distinctly touched the head as the presenting part, but now to my surprise, I found that the bag impinging on this part had caused the child to revolve in the liquor amnii, and that the breech was now within the os.

"We decided under these circumstances to deliver at once. The patient being put under the influence of ether, I drew down the legs and delivered a living female child. The placenta followed in fifteen minutes, and both patients did well, the child rapidly recovering from an injury to one of its legs received during delivery.

"*Remarks.*—In this case the placenta was very nearly centrally attached. At one side of the os internum a space of only two fingers' breadth was free. Through this digital examinations were made and the hand pushed to seize the feet. The first stage being accomplished by means of the hydrostatic dilators, no hemorrhage attended it; but without this means having been employed it is highly probable that profuse and dangerous flooding would have occurred."

Rupture of the Uterus.

Dr. G. J. TOWNSEND, of Natick, Mass., reports to the *Boston Med. and Surg. Journal* (May 14th, 1868), a case of rupture of the uterus, induced by difficult labor caused by a projection forward of the promontory of the sacrum, thus diminishing the conjugate diameter of the brim of the pelvis more than one-fifth. Delivery was effected by turning. On giving an unfavorable prognosis of the case the Doctor was supplanted by an empiric, whose treatment in part consisted in the free use of veratrum viride, and the reduction of the circulation by that means. The patient lived twenty-one days and four hours after the accident, having sat up several times in a chair to have her bed made, and even walked a few steps to her chair and back again to the bed. The autopsy revealed the situation of the rupture, which was anterior and low down toward the neck, allowing the free escape of all discharges, thus remedying the distension of the abdomen.

On the same subject Dr. D. W. BUTLER, of Dunreith, Indiana (*Western Journal of Medicine*, April, 1868), says: Was called to see A— M—, an unmarried female, twenty-four years of age, of sanguine lymphatic temperament. Found patient in labor, this being her third confinement, the first being about four years ago, when she was delivered of twins; one was born naturally, the other was taken away with a "pot hook," which, during the operation, slipped, producing laceration of the parts, and finally resulting in vesico-vaginal fistula, which lesion has troubled her ever since.

Patient's second labor took place two and a half years ago, at which time Dr. John Lewis, of Ogden, was with her, and reports the case as one of spontaneous evolution.

The patient had a chill four days previous to my arrival, followed by severe pain in the head, nausea, and vomiting, with some evidences of approaching labor. She

had partaken freely of morphia, and was considerably narcotized when I saw her; the pupil was contracted, pulse 140 per minute, respirations 40, nausea and vomiting still continued, ejecting a large quantity of dark green and extremely viscid material; complained of great oppression in the epigastric region, extreme thirst, great prostration. Uterine efforts had ceased twelve hours before my arrival. Gave at once a full dose of quinine and carb. ammonia, and proceeded to make a vaginal examination. Found the external genitals well relaxed, but the os uteri beyond reach. Palpation revealed an unusual prominence in the superior portion of the abdomen, of the nature of which I was at first unable to determine, but upon further and careful manipulation, I thought I had unmistakable evidence that the head of the child had escaped from the uterus into the abdominal cavity. It occurred to me at once that I had a case of rupture of the uterus to deal with, and owing to the great prostration of my patient, the case would, necessarily, soon prove fatal. I administered whiskey, quinine, opium, and carb. ammonia, in full doses, and succeeded in arousing the energies of my patient, and producing considerable contraction of the ruptured uterus. At one o'clock P.M., eight hours after my arrival, I found the os uteri dilated to the size of a dollar, but firm and unyielding, with the side and abdomen of the child presenting and forced down into the pelvic cavity. I at once dispatched a messenger for medical assistance, not fully satisfied in my own mind which would be most likely to save the patient, —to perform the Cæsarean section, or to turn and deliver.

Taking into consideration the prostrated condition of the patient, and the ample dimensions of the pelvic outlet, I determined upon turning, and succeeded in performing cephalic version, and delivering her of a full-grown male child in a state of putrefaction. Patient bore the operation much better than I expected. After administering two ounces of whiskey and one gr. of opium, and allowing her to rest a few minutes, I passed my hand into the uterus and could distinctly feel the small intestines, producing in me a sensation more easily imagined than described. I found an extensive rupture of the fundus of the uterus, sufficient to admit the head of the child.

After replacing the abdominal viscera I found the placenta adherent. At this juncture of the case, my friend, Dr. Bartlett, of Lewisville, arrived, and after making a careful examination, confirmed my diagnosis. We succeeded in removing the placenta without much trouble. The uterus contracted measurably well. Despite the tonics and stimulants, the patient sank more rapidly than before delivery, owing, perhaps, to the escape of the contents of the uterus into the peritoneal cavity, until eleven o'clock P.M., when death relieved her of her suffering.

In a late number of the *British Medical Journal* also we find a case reported by Dr. H. M. MADGE, as follows:

Mrs. M., aged 42, of good general health, had had tedious labors. This was her tenth confinement. She was taken in labor on the evening of December 21, 1867. At 2 A.M., labor having made but little progress, and the quiet intervals becoming longer, half a drachm of laudanum was given. Irregular pains continued up to 5 A.M., when the patient began to doze, and from that time they almost entirely ceased. There was no shock, collapse, or sickness. She slept a little, and in the morning was able to sit up in bed, conversing with friends and taking her breakfast. At 11 A.M., there had been no return of pains; and symptoms of exhaustion were coming on without obvious cause. It being thought that internal hemorrhage might possibly be going on, it was decided to use the long forceps.

Egg and brandy were ordered, and an enema administered. During Dr. Madge's absence, the patient walked into an adjoining room without assistance; the bowels were freely relieved, but, whilst sitting on the commode, she felt something give way in the abdomen, followed by a sharp pain in the hypogastric region. With assistance, she walked back to her bed. She was now in a state of extreme exhaustion. The assistance of Dr. Hall Davis was obtained, who, on his arrival, delivered by turning. She died about an hour after delivery. The child had apparently been dead for several days. The posterior wall of the uterus was found to have been lacerated, the abdominal viscera being easily felt by the hand introduced per vaginam. A post-mortem examination could not be obtained. The injury was probably partially effected some hours before the birth of the child, and was made more complete by the straining efforts at stool. Dr. Barnes said that this case afforded another proof that a dead child was an efficient cause of rupture of the uterus. He believed it was best, if the child were still in the uterus, and were felt presenting through a dilated os at the brim, to deliver by forceps or by turning. Gastrotomy was especially indicated when the foetus had escaped into the abdominal cavity.

Treatment of Puerperal Convulsions.

We take the following from a lecture delivered to his class by D. WARREN BRICKELL, M.D., Prof. of Obstetrics, etc., in the New Orleans School of Medicine; reported in the *New Orleans Journal of Medicine*, January, 1868.

There can be no question that, up to the present time, the prevalent theory in relation to the prime cause of eclampsia finds its full expression in the single word "plethora." The woman is too full of blood. Hence, depletion is the remedy; venesection is the best mode of depletion, and this must be carried out to its fullest extent. In the language of Hodge: "With most patients, fifteen or twenty ounces must be regarded as a small bleeding; double, treble, and, occasionally, even more, must be taken to insure safety. In plethoric patients, in one or more hours the operation must again be repeated to the extent of twenty or thirty ounces, and occasionally the patient will tolerate even two or more bleedings." So that in plethoric patients, so called, sixty or eighty ounces of blood may be abstracted, and "in one or more hours," this operation may be repeated to the extent of twenty or thirty ounces. Or, in the course of one or two hours, we may abstract eighty to one hundred and ten ounces. Physiologists estimate the quantity of blood in the system of a healthy man at twelve pounds avoirdupois, or one hundred and ninety-two ounces; so that more than half this fluid is to be abstracted in the class of cases named. This is what is termed the "bold practice." The idea is, not that the blood is deteriorated in quality, but that it is simply superabundant, and that the superfluity must be let out. But, as I have told you before, feeble, delicate, positively diseased women, have the most intense and dangerous attacks of eclampsia. But these must be bled too. Hodge says, "that in many who are feeble and delicate, small bleedings should only be employed; there can be no doubt." But if it be true that in the first class named—the strong and healthy—plethora exists, and consequently bleeding is indicated, and to the extent named, is it possible that in "the feeble and delicate" the same superfluity exists, and the same remedy is to be employed? To my mind, we here encounter one of those strange contradictions that is at least calculated to make us stop and

think seriously before we act. If bleeding is right in the one case, it must be wrong in the other; unless we adopt the short-hand reasoning, that a case of eclampsia got well after venesection, consequently all cases must be bled.

The general idea with the advocates of the lancet seems to be that this plethora causes eclampsia; the exceptional idea with them is that blood must be abstracted to prevent local congestions. On this latter ground they even bleed "the feeble and delicate." Now, I find it very singular, indeed, that in the disease most closely allied to *eclampsia gravidarum*—viz., epilepsy—and in the stoutest individuals affected, venesection is not thought of at all; certainly it is far from being regarded as the sheet-anchor of the practitioner. Indeed, in none of the convulsive or spasmodic diseases we have alluded to is this plan of treatment urged, unless it be that apoplexy be classed as convulsive. Theoretically, I do not know what a man means when he tells me that he bleeds because the woman is too full of blood, and either because this superfluity, in his estimation, causes the eclampsia, or because it may result in grave local congestions. A woman passes all the way through the term of pregnancy in a condition of health, she goes into labor in health; all this time there is no sign of eclampsia. For some reason, however, labor is delayed, protracted effort results in eclampsia, and now it is ascertained that "plethora" lies at the bottom of the trouble, and the lancet is the remedy. Or a positively feeble and delicate woman, in the course of pregnancy, is seized with eclampsia; it cannot be contended that she is "plethoric," but the convulsions or spasms may end in local congestions, and she is bled to avert this condition. In the first case, the patent cause of the woman's trouble is made of secondary consideration, and she is bled to stop the evil on the naked theory that she has too much blood in her; in the second case, it would be silly to cry "plethora," but "local congestions" must be *prevented*, the legitimate effort to arrest the existing evil (eclampsia) is made of secondary consideration, and the effort is made to avert an anticipated evil.

To my mind, the whole theory of this "bold practice" is utterly wrong, and where I have seen it put in practice the results by no means satisfy me. All our so-called "text-books" on Obstetrics come from climates differing greatly from ours; we have English, Scotch, French, German, and so-called Northern—that is, from the Northern States of this country. I feel great delicacy in saying that the practice is wrong where the authors of these books practice, for we do know that climate exerts a strong influence in modifying disease and the means of relief of disease. In the face of the fact, however, that no author tells us, when extolling the "bold practice," just what percentage of mortality he encounters, while I repeat that the results of bleeding here are by no means satisfactory, I cannot be blamed for suspecting the same condition of things elsewhere.

I have told you that I believe pregnancy to be the one great predisposing cause of the affection; that is, if a given woman to-day with the spasm were not pregnant, she would not to-day be in this condition. I have shown you that where the favorite "bold practice" has utterly failed to allay the spasm, delivery has at once accomplished that desired result; that before delivery was accomplished the spasms continued, and as soon as delivery was effected the spasms ceased. This is the observation of the strongest advocates of the lancet. We find them telling us, that in case bleeding does *not* meet the end in view, we must deliver. Meigs puts this point very forcibly, and yet he is an enthusiastic advocate of the lancet. At page 404 he says: "Under the dreadful circumstances of this disorder, one

reflection ought to strike very forcibly the mind of the medical attendant; it is, that if the woman were not pregnant, she would not be assailed by the disease; and the inference very justly follows, namely, the pregnancy ought to be terminated in order to put a stop to the malady. . . . We shall enjoy a far better prospect of rescuing the woman if she can be delivered, than we shall if the womb remains unemptied." Again: "It is, therefore, always desirable that the patient should enjoy the benefits of as early an accouchement as possible," etc. And then, at page 408, what?—"The only real resource in the puerperal convulsion, is in the use of the lancet." And again: "The lancet, the lancet, and nothing but the lancet, is worth your confidence." Wonderful contradiction in almost a single breath!

The great important point I would urge on you, then, is to bear in mind, at the bedside of every case, the fact that the constant predisposing cause is pregnancy.

Then, you will say to me, delivery is the remedy for eclampsia. I say, yes; but not an indiscriminate and precipitate delivery of every case you encounter, without taking into consideration attendant circumstances.

I tell you that delivery is the most valuable single remedy, and that if I am confined to a single remedy, I will save more lives with it than you can with any five other remedies; but I tell you there are cases that do not require delivery, and inasmuch as delivery prior to the viability of the child means certain destruction of that child, it is a clear proposition that delivery is exceptionally inadmissible. I will illustrate this thing.

CASE 1.—Last year I was called in consultation to a delicate and refined little lady, who had been for several hours suffering from eclampsia. She was about six months pregnant. Her physician had been for several weeks treating her for headaches, puffy face and extremities, etc. When I saw her she had had some five or six spasms, and she was now in a comatose condition. She had not been bled, but the effort had been made to check the spasms with chloroform and opiates. These, however, had signally failed. While we were investigating the case, a hideous convulsion occurred, and it was with great difficulty that she returned to a safe rhythmic respiration. Her pulse was persistently quick, there was no essay towards return of intellect, she was very frail, she had evidently exhibited very disagreeable symptoms during the past few weeks, and now, so far from any mitigation of spasmodic symptoms, these were growing more intense. I advised immediate delivery as affording her the only chance of recovery, at the same time expressing my confidence in her being thus relieved. But the os uteri was not open. I advised that it be artificially opened by manual effort; that she had no time to spare for experiments for inducing premature labor. The fingers were at once applied; steady and careful pressure was kept up, and in less than an hour and a half the fetus was turned and delivered. During the operation she had two spasms; about three-quarters of an hour after delivery she had a slight one, and no more after. In a few hours she was fully awake, and recognized her friends. Her recovery was somewhat protracted, because of the vitiated condition previously mentioned; but it was complete, and she had no local trouble whatever.

CASE 2.—I was called in consultation to a case of eclampsia a few years ago, wherein nothing had been done. I found that the young woman, six months

pregnant, had been for some ten or twelve days obstinately constipated, that she had been suffering bitterly from headaches, and had at last fallen into spasm. Examination revealed the rectum thoroughly impacted with feces, and the pelvic viscera all in a most sensitive condition. Injections, carefully and thoroughly administered, cleared the bowels, and the spasms disappeared.

I say, then, that the delivery of the ovum is the most prominent indication in the eclamptic case, and what I would call successful practice hinges on the thorough recognition of this principle; but in all cases where the incidental cause can be defined, and when defined, can be removed, the removal should at least antedate delivery; and this is more especially important where the delivery would certainly, or even probably, compromise the life of the child. But I contend that where the incidental cause cannot be discovered, or, if discovered, cannot be removed, and the case is at all urgent, delivery is not only indicated, but more good is to be derived from it than from venesection or anything else.

In case a woman is positively in labor, whether at or before term, I contend that delivery is indicated both for herself and child. The longer a woman is suffering from eclampsia, the more rapidly are her chances for recovery diminishing; and this is as true of the child. The common anticipation of practitioners is the death of the child born from the eclamptic woman, and I am sure the reason will be found in delay of delivery. If a woman is in labor, and the way is open for delivery, I say deliver without a moment's delay.

But the great bugbear before authors and practitioners, in this matter of artificial delivery, is the so-called rude manipulation that may be necessary. I have cited you a case wherein all that was necessary was rupture of the membranes. This proceeding will surely not compromise the mother. I have cited another, where I delivered with the forceps. This is an instrument devised for the *relief* of women and children, not for their mutilation or destruction, and it is simply puerile to speak of any dangers arising from its use for the relief of a woman suffering from so dire a disease as eclampsia. I have cited a case in which a six months' child was turned and delivered, and the patient recovered. When I can deliver with forceps I never perform version; but granting that version has to be effected even at full term, I can scarcely believe that an intelligent obstetrician can be found to say that it is more dangerous than eclampsia. And again, I have cited cases wherein I manually dilated the os uteri, and that speedily, to effect delivery, and you have seen that the patients recovered.

I have performed manual dilatation again and again, and have never seen the least evil result. I suppose a man *could* exert such force as to rend the parts he is attempting to dilate, but this would be a gross departure from the rule of common sense, that could not legitimately be used as an argument against the operation. If the operation is carefully performed, my own belief, founded on experience, is that it will never injure. But let the worst come to the worst. Suppose, if you please, that the os uteri *will not yield*, that other remedies have been tried, even the "bold practice" itself, and that our patient is marching on to the grave; I say that, as we are justified in cutting the os in case of persistent rigidity under ordinary circumstances, so we are in eclampsia. In fact, if it be a duty to cut the rim of a rigid os in labor (and it is by authority and common sense), it is doubly a duty when that labor is complicated with eclampsia. So that you may absolutely cut the os uteri to pieces, and no evil will result. How absurd, then, to shrink from mere dilatation!

Have we any other remedies than venesection and delivery? Yes, a most formidable array, but only a few are worth your consideration. I have shown you the obligation to remove incidental causes, and the causes themselves point to the remedies. An overloaded stomach requires an emetic—the simpler the better; an impacted rectum demands enemata; a distended bladder demands the catheter; emotional disturbance, although never difficult to manage, points to its remedy; and so on to the end of the catalogue. Sometimes the mere removal of the incidental cause does not stop the spasm entirely; for once this condition is established, in many cases it is hard to control it while pregnancy exists. Where we still desire to preserve the ovum, and the nature of the case warrants us in delaying, chloroform and opium will be found valuable adjuvants. If given, my opinion is that they should be given in full quantity—that is, chloroform to complete anæsthesia, and this continued for one, two or more hours, and not to the mere state of excitement; opium to its positively soporific effects, and not in dallying doses, which exhilarate and increase rather than diminish the nervous phenomena. For myself, I confess that I have oftener been disappointed in these remedies than otherwise, though you find them much vaunted by the books. Of the two I prefer chloroform; it acts more speedily, and if there is any good to be derived from it we may soon know it; thus much valuable time is saved. Again, its effects are less permanent than those of opium and its preparations, it does not disturb secretion, nor paralyze digestion, nor produce constipation. Still, I do not discard opium, for I have succeeded in calming patients with its preparations when I soon found chloroform inefficient. The estimation in which I hold these remedies is this: When we desire to retain the integrity of the ovum, and the spasms continue notwithstanding the removal of the incidental cause, *sometimes* they will prove efficacious, but we must not look confidently for such results. In a *few* cases where the integrity of the ovum must still be contended for, but the incidental cause cannot be discovered, we may find them checking the spasm. This I believe to be very rare, however.

Now there are remedies kindred to chloroform and opium, and which some practitioners use, but my observation is, that where chloroform and opium fail, little is to be expected of their kindred.

But let us try to reduce this subject of treatment to such a point as that we may comprehend it at a glance.

1st. If the woman is in labor, while it is meet that we remove any incidental cause manifest, let us make speedy delivery our prime object, and let us effect it by the simplest means possible, always, however, bearing in mind the fact that delivery is not to be delayed, because no means of delivery is as dangerous to mother and child as continued eclampsia.

2d. If the woman is seized with eclampsia during gestation, remove the incidental cause if possible. If the spasms recur notwithstanding the cause being removed, chloroform or opium, or the kindred remedies, may now arrest them. If they do not speedily do so, delivery is preferable to delay. If the child in such case is strictly viable, the more forcible the indication.

3d. If the woman is eclamptic during gestation, or in labor, because of general vitiation, as in uræmia or malarial poisoning, delivery is the best chance she has for recovery. These are the worst cases we encounter, and are not to be expected to yield to anything short of delivery. Such vitiations *plus* a prominent and immediately removable incidental cause may exist, however, and the removal of the

latter may arrest spasm and enable gestation to be completed. The obligation to save the child demands the effort alluded to.

4th. If eclampsia is *threatened* during labor, delivery is imperatively demanded, as to wait for the development is to invite complication. If the threat exists during gestation, look earnestly for removable incidental causes, and remove them if found.

There is one class of cases which may be considered the worst, but which fortunately, are seldom encountered. I refer to the post-partum. Sometimes the spasms continue after we have delivered; occasionally they first show themselves after delivery. My observation teaches me that we are to anticipate no such evil if we deliver *early*. It is only where the patient has been allowed to wear herself out, as it were, that the spasms recur. And in the still rarer class named, my observation teaches me that the condition is confined to the thoroughly vitiated and threatened, who have at last been allowed to be too much depressed by the shock of labor—who have not been assisted.

Finally, the prognosis in eclampsia is a matter calling for careful study. Prognosis and treatment are in direct relation with each other.

1st. The prognosis is more and more unfavorable as the intervals between the spasms are shorter. Under frequently repeated spasms the brain more rapidly succumbs, and exhaustion from muscular action is not only more speedy, but is cumulative. We may, then, where the spasms are recurring at intervals of two to six hours, find no indication for *speedy* action; whereas, if they are recurring every five to thirty minutes, action is the word.

2d. The prognosis is graver as intellectual annihilation is more profound and more persistent. In other words, the demand for action is more imperative as the intellect is more completely and permanently obtunded.

3d. The prognosis is graver in the subject of manifest blood vitiation, as in uræmia or malarial poisoning, and I think still graver where, with such vitiation existing for months during gestation, the spasms supervene on labor.

4th. The greater the duration of the paroxysm of spasms, the graver the prognosis.

5th. The longer the patient is allowed to remain the subject of eclampsia, the graver does the prognosis become.

6th. The prognosis is rendered graver by the existence of any acute or chronic concomitant disease, or of any constitutional frailty.

7th. The prognosis is rendered graver by the existence of a manifest incidental cause which cannot be removed.

On the other hand Dr. ROBERT DYCE, Professor of Midwifery in the University of Aberdeen, makes some valuable remarks in the *Brit. Med. Jour.*, April 18, 1868, on some cases of puerperal convulsions. He observes: In these days, when we hear so much of the change of type in disease, with the consequent dread of bleeding, the minds of many in the profession may perhaps be startled by my recording the following cases where bleeding and other lowering remedies were so fearlessly carried out in the treatment of this alarming disease. I have the satisfaction, however, of stating that every case without exception terminated favorably. It will be observed that in whatever class of patients the disease occurred—whether in the nervous and irritable, whether in the plethoric and robust female, or at whatever period of pregnancy or labor the attack appeared, the same practice was pursued, and with the same unvarying success. It will also be specially noticed that in some albumen was ascertained to be present, while in

others, though not looked for, its existence was strongly presumptive, from the extent of oedema, not only in the limbs, but in the face and body generally ; yet no essential difference in the treatment took place.

These cases show not only the value of bleeding as our sheet-anchor, but also the great extent to which it may be carried, whatever be the period of the attack, and whatever the constitutional character of the patient ; and this, too, without any interference with the rapid convalescence of the patient, and her ultimate usefulness as a nurse to her helpless infant. These facts have strongly impressed me with the belief that there must be some special provision made in the parturient female, to admit of such a great loss of blood, not only when these losses are so enormous as on some occasions follow ordinary parturition, but also in cases where it may be deemed necessary to remove blood, such as in those now under consideration ; for assuredly such a loss at any other time, under ordinary disease, could not be borne without entailing serious, almost irreparable mischief.

Whatever may be looked upon as the primary cause of puerperal convulsions, whether blood-poisoning from so-called retention of urea, or solely congestion of the brain, the same remedy I consider to be equally demanded. The chief danger is in the brain. The cerebral circulation must be relieved—lessened in all cases ; and it is by this remedy only that the brain can be preserved from serious injury. But, to attain this end, there must be no half measures ; the remedy must be fearlessly practised, and repeated as required, from the moment of the attack ; and I cannot doubt that equal success will follow this practice in the hands of others. This is no new observation ; it has been strenuously urged by our predecessors, and its success proved ; and, though the use of bleeding is now by many in the profession still admitted, it is also by not a few very eminent men ignored altogether, or to such an extent as to be nearly absolutely useless in saving life. I think that we are too apt to despise antiquated notions, and too ready to adopt novelties, without regard to strict philosophical reasoning, and thus to lose sight of the main point at issue. I think, also, that too much weight has been attached to the mere presence of albumen, if taken as a prognostic of eclamptic fits ; for I have detected albumen in pregnant women, and yet they went through all the stages of labor and childbed without fits ; and others have met with cases in which albumen has been consecutive upon convulsions.

There is one fact in reference to these cases worthy of notice ; viz., that the recovery in every case was complete, was rapid, and that in no case did coma, or even a half-conscious state, remain beyond a very short time after a permanent impression had been made on the system by bleeding ; whereas, if the patient be bled sparingly, the coma may be prolonged for days, the convalescence rendered tedious and uncertain ; nay, even death may be the result.

Although my chief reliance is placed on the free use of the lancet in all such cases, it is not to the exclusion of other very important remedies. Still, all of them, I consider, are but auxiliary and conditional remedies, and only to be employed subsequently to, or in conjunction with bleeding. Thus, the free and immediate use of the cold douche, with purgatives, is essential ; so also opium, if given judiciously and with the restrictions so well pointed out by Collins, may often supersede the necessity of further depletion ; but if given injudiciously at the outset, and without previous bleeding, opium in any shape will be absolutely and positively injurious.

Again, chloroform is a very important adjunct, especially if it be necessary to

hasten and conclude the labor. Its administration will allay the great restlessness and tossing about of the patient, and thus admit of the application of the forceps without the fear of any injury, a circumstance always to be dreaded in operative midwifery under such circumstances. After bleeding, on any indication of an approaching fit, marked by rigidity of the limbs, a staring, fixed expression of the eyes, and increased restlessness, chloroform should be freely given, and the effect kept up until these symptoms subside, and quiet sleep is induced; the pulse being especially watched (on which I solely depend). But, if it fail in arresting or shortening the fit, it should be discontinued, or given with more caution, and recourse again had to the lancet. By these means, the risk of fatal oppression of the brain or extravasation will be prevented, and the convulsions lessened.

But there is another, and a very important part, in the treatment which remains to be considered. The patient is suffering from a disease dependent upon the state of the uterus, which state, it is believed, can only be got rid of by terminating the labor. What, then, are the principles that should guide us regarding delivery in these difficult cases? In short, will it be proper to interfere with the progress of gestation or parturition? As far as my own experience goes, I believe that generally interference is prejudicial in whatever stage of the labor the convulsions may occur. Most assuredly, during gestation, and before labor has commenced, it will be universally conceded as admitting of no dispute, that until labor has commenced, any interference on our part would be highly injurious; so that, in convulsions during pregnancy, we have, as Gooch says, "nothing to do with the uterus, but solely to attend to the convulsions." It will also be equally admitted that, in the first or early stage of labor, should convulsions come on, every attempt, by the finger or other artificial means, to dilate the os uteri, ought to be avoided; as it will be found not only to bring on convulsions, but generally to increase them in violence. Denman assures us that he "attempted gently during every pain to assist in the dilatation of the os, but he was soon convinced that the convulsions were not only brought on and continued, but increased in violence; he therefore desisted, and left the work of delivery to Nature." Thus, then, before labor comes on, or in the first stage of labor, I consider interference wholly inadmissible, and only tending to increase the danger. But in the second stage, when the head has come well down into the pelvis, and within reach of the ordinary short forceps, if, after free bleeding and the use of the other remedies, the convulsions were not manifestly lessened, provided the restlessness of the patient could be controlled, I would at once apply the forceps and bring away the child; as this may now be easily accomplished, and is the only expedient left on which reliance can be placed for the permanent removal of the convulsions.

With regard to turning, I consider the operation a very questionable practice under any circumstances; as I should fear that the irritation occasioned by the introduction of the hand would do far more harm than would be compensated by the benefit derived from emptying the uterus. If it be attempted, it ought to be confined to that stage in which the os is fully dilated, while the membranes are unruptured, so that there may be as little increase of irritation as possible; for, if the uterus closely embrace the child, as it does after the escape of the waters, or the os be not fully dilated, the dangers of the operation will be very great. But, unfortunately, the mere emptying the uterus does not always arrest the progress of the disease; for I have known cases where the fits have continued unabated for several hours after delivery; and a case will be detailed, in which the first fit

occurred some hours after a favorable and easy labor, showing some other cause for their continuance than mere uterine irritation. I would much prefer and would recommend watching the result of repeated bleedings; and if it were found that the return of the convulsions had been prevented, or even that they were lessened in violence, I would refrain from immediate delivery, and perhaps this forbearance would be followed by natural delivery, the progress of which, it should be remembered, is always more rapid under convulsions. It hence requires constant watching, lest, as has happened in many instances, the patient has been delivered unknown to all, and the child lost. This rapid progress of labor under convulsions is an argument in favor of some consideration when so doubtful an operation as turning is contemplated. But, besides these objections, it will be found to be an unquestionable fact, that far more women die when they are officiously delivered by artificial means of whatever nature, than when they are left to their own resources.

The Duration of Pregnancy.

Dr. C. E. BUCKINGHAM, of Boston, communicates to the *Boston Medical and Surgical Journal* some observations on the duration of pregnancy, in 323 cases. The estimate is made from the first day of the last menstruation. The time that elapsed varied from 230 to 330 days. Of these cases, 114 were first, 88 second, 58 third, 24 fourth, 12 fifth, 6 sixth, 3 seventh, 2 eighth, 1 ninth, 2 tenth labors, and 13 not stated. The duration in weeks is given as follows:

33d week,	3	42d week,	50
34th "	1	43d "	18
35th "	5	44th "	11
36th "	9	45th "	2
37th "	14	46th "	1
38th "	13	47th "	1
39th "	41	48th "	1
40th "	78		
41st "	76	Total,	323

Labor.	Confined within forty weeks.	Confined on or after 280th day.
1st,	54	60
2d,	34	54
3d,	28	30
4th,	10	41
5th,	7	5
6th,	5	1
7th,	2	1
8th,	2	0
9th,	1	0
10th,	1	1
Unknown,	5	8
Totals,	149	174

One of the curiosities of the collection is the patient who went 330 days, and who acknowledged having been several times operated upon for the purpose of procuring abortion, and having been constant in the taking of medicines for the same purpose.

I afterwards found that this woman had invariably tried to produce abortion in

every pregnancy. She has been confined, I think, 12 times in all, but has had only 4 living children. She has seldom gone over seven months, and her husband professed to know nothing of any attempt to procure abortion. I am satisfied, from her own statements, however, that except perhaps in two instances, there has always been some endeavor, by drugs or instrumental interference, to put an end to pregnancy. In two cases in which it was attempted it failed, and in one of the labors she was attended by the operator, who, as is usual in such cases, performed his operation on the condition that he should not be called upon to attend the case. This child was also living.

Of all the patients, only 15 were confined on the two hundred and eightieth day, two only of these being first labors.

One pair of twins (a fifth labor) was born on the 230th day; one pair on the 247th, a sixth labor; one pair on the 276th, a second labor; one pair on the 278th, a fifth labor; and one pair on the 280th, a second labor.

A question has risen, which only long observation can answer, How much has a constantly irregular period of menstruation to do with the duration of labor? I think that a very large minority of women menstruate upon another than the twenty-eighth day. Certainly a large minority are irregular; and many have some other regular period, like twenty-one, or thirty, or even more days.

The earliest born child that lived (230 days) was one of a pair of twins. The mother had aphthous sore mouth and profuse salivation during pregnancy.

March 3d, 1856. After a restless night, labor began at 9 A.M., with rupture of the membranes. The rupture took place immediately on rising from bed, and was preceded by chill and cough. I saw her at 11 A.M. Os uteri one-half dilated. Vertex in left occipito-cotyloid position. At 11.40 A.M., the first and second stages were complete. Child, male. A second child was born, also a male, and in the same position. This was at 11.50 A.M. The second child came away with its placenta and membranes not ruptured. Five minutes later, the placenta of the first child was born. There was no sign of blood with either, nor was the amount of fluid large. The second child died at 11 P.M., respiration never having been properly established. The first child, dressed, weighed 3½ pounds. It lived till the 3d of the following September, when it died of cholera infantum.

The mother never had any secretion of milk. The salivation continued till the 31st of March (1856), when it was very slight. During this time there were days when it ceased altogether, and again when it amounted to 8 pints in twelve hours.

Obstetric Statistics at the Hospitals of Vienna and Prague.

Dr. H. Z. GILL, in a communication to the *Cincinnati Lancet and Observer*, gives some interesting obstetrical statistics of the Hospitals of Vienna and Prague. He says:

There are 8000 births annually at the general hospital at Vienna, in the divisions under the care of Profs. Braun and Spath. From the first of January, 1867, to July 31st, there were admitted into Braun's division 2531 cases. This, it will be seen, is below the average, which is from 4800 to 5000 annually, and is accounted for by the fact of there being always more admitted during the latter months of the year.

During the months of June and July, sixty-one days, there were 627 cases of accouchement. Of these, 8 cases were twins; 28 cases were miscarriages; abortions,

7; placenta prævia, 2; prolapsus of the cord, 5; presentation of the face, 5; presentations of the breech, 12; ruptures of the perineum, 21; forceps cases, 13; episiotomy, 13; craniotomy, 2; hemorrhage post-partum, 12; eclampsia, 2; tetanus uteri, 1; hydrocephalus, 1; incisions of the os uteri, 1; deaths, 9, at least one-half above the average number; of the latter one was from scarlatina; 1 from pelvic abscess; 1 from erysipelas; 1 from pleuritis; and 5 from metritis and peritonitis. When cases convalesce favorably, they are retained at the institution only nine days; unfavorable cases are retained longer.

There are about 3000 births annually at the obstetric institute, at Prague, including the three divisions for physicians, for midwives, and the divisions for private patients, to which students are not admitted. There had been admitted to the two first divisions from January 1st to August 31st, 1611 cases. Of these, three-fifths were sent to the first, and two-fifths to the second division.

During a period of sixty-one days, commencing July 29th, and closing September 27th, there were 189 cases of accouchement in the first division; 10 cases of twins; therefore 199 children born. Of these (189) cases, there were contracted pelvis 14; miscarriages, 12; face presentations, 4; placenta prævia, 1; forceps cases, 10; craniotomy, 1; hemorrhage post-partum, 4. There was but one death during that period; that was a case delivered early in July. This is certainly a very favorable record.

Diet of Puerperal Women.

In a discussion before the New York County Medical Society (New York *Medical Gazette*, January 11th), on the subject of Alimentation in Disease, Dr. FORDYCE BARKER spoke as follows on the subject of the diet of puerperal women:

From the days of Celsus down, the plan has been advocated in all standard works upon obstetrics—by Gooch, Hamilton, Ramsbotham, Burns, Churchill, Tyler Smith, Dewees, Hodge, Meigs, Cazeaux, Chailly-Honoré, etc.—of giving to women, for at least sixty hours after confinement, a purely farinaceous diet, such as sago, tea and toast, arrow-root. The only exception is the “judicious” Denman, who recommends that the woman have the diet to which she is accustomed. A similar idea was popular in England just before Denman’s time, but it was rapidly put down by the profession. Dr. Barker’s own change of views was due to a study of the subject some fifteen years ago. The object to be attained was to bring about the normal state of health as rapidly as possible without injury to the mother or child. The changes of tissue, such as fatty degeneration, cicatrization, must take place, to reduce the weight of the uterus from thirty-two to one and a half ounces; and lactation is to be established. Now, the first indication is perfect rest, to restore the exhausted powers. Then, to develop lactation as easily, rapidly, and with as little loss as possible. The older authorities thought this was accomplished by a light diet. On the contrary, Dr. B. thought the diet should be just as good as could be assimilated. His experience in subsequent years had confirmed him in this opinion. His plan is to give, if it can be readily obtained, a bowl of bouillon as soon as the patient is sufficiently rested to desire food, and afterward whatever diet the patient may desire, such as birds, poultry, or even beef. In carrying out this plan of treatment, much prejudice on the part of the patients, and especially of the nurses, will be met at the outset; but Dr. B. has found that nurses that have seen its action soon become its ardent advocates. The result of this plan, com-

bined with some other causes, is that the "milk fever" is much less often seen than formerly. The irritability of the nervous system common after parturition, is much less than under the old plan of alimentation.

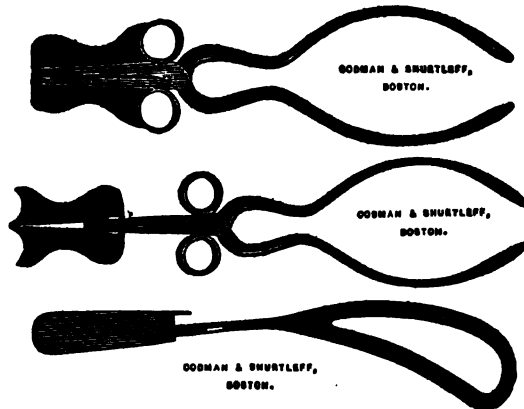
In this last connection he remarked that his experience confirmed the statement of Tyler Smith, that puerperal mania is a disease resulting from exhaustion, which would be another argument for the use of a supporting plan of treatment. Toxæmia had been urged as a cause of puerperal mania and convulsions; this he thought generally incorrect, as albuminuria is present in but about ten per cent. of the cases. In concluding, he acknowledged his indebtedness in former years to Dr. Jacobi for his suggestions as to the advantages of a supporting form of alimentation.

Improved Midwifery Forceps.

Dr. JOHN BUZZELL, of Portland, Me., read before the Maine Medical Association, at its meeting in 1867, a description (published in the *Boston Medical and Surgical Journal*, Dec. 29, 1867) of an improved midwifery forceps. He says: During the first ten years of my practice, I was often obliged to spend from twenty-four to forty-eight or more hours in attendance upon cases of parturition. This was true more especially in primiparæ. I frankly acknowledge that notwithstanding the prevalent idea that nature must have her own time to do her own work, I often felt, during these experiences, a strong desire to abbreviate this process. It did appear to me that if I had power to flatten and elongate my thumb and fingers so as to inclose the head of the child within their grasp, I could greatly facilitate delivery without injury to mother or offspring.

In the absence of this power, I contrived the forceps herewith delineated. Their peculiar virtue lies in their compactness and facility of application, not requiring any change from the ordinary position of the patient on the left side.

FIG. 13.



The blades in general contour resemble Simpson's, but are wider and thinner, thus presenting more surface with the same amount of metal and strength, and occupying less space in the pelvis. The curve of the blades is such that they never slip. The handles are peculiar, in that they are very short, so that they can be grasped in the palm of the hand, but are capable of being lengthened, one part turning out upon the other, giving sufficient length to apply them in the superior

strait, also affording a fulcrum for another hand when both are required in extraction. When turned at right angles they can be used as a lever to change the position of the head, whenever it is desirable to do so. The rings are similar to Bedford's. The joint is like Simpson's. In fact, I claim no other originality than that of combination, and after nine years' experience, during which time I have applied them about two hundred times, I desire to call the attention of my professional brethren to them, believing that by so doing I shall not only confer a favor upon them, but contribute in some degree to the relief of human suffering.

I do not wish to be understood as advocating the too frequent use of instruments in labor. I am aware that in inexperienced and unskilful hands any instruments are dangerous; but, I do believe that, with such forceps as are here presented, a skilful and judicious obstetrician can with safety greatly *facilitate* delivery in tedious labors, often abbreviating the process from two to twelve or more hours; and thus actually removing many of the dangers and accidents to which lying-in women are liable. Since I have had these instruments, I have not had a patient suffer from ruptured perinæum, vesico-vaginal fistula, or puerperal fever—proving, at least, that they have not contributed to these accidents.

Cæsarean Section.

Dr. WM. WARREN GREENE, of Pittsfield, Mass., Professor of Surgery in Berkshire Medical College, in the Medical School of Maine, and in the University of Michigan, reports (*Boston Medical and Surgical Journal*, Feb. 6, 1868) a case of Cæsarean section in which both mother and child were saved.

On the 20th of August, 1867, I was called in consultation to see Mrs. B., aged 28, in her first labor, which began twenty-six hours previous to my arrival. Her physician, Dr. D. N. Emery, now of San Francisco, informed me that his patient had a pelvic deformity, which he feared would render delivery impossible, and he had for this reason called counsel. Upon examination, I found the antero-posterior diameter of the superior strait less than two inches.*

Her pains were strong and frequent, and she began to exhibit marked symptoms of exhaustion, to which her consciousness of peril contributed not a little. The child was very active *in utero*. Upon explaining to herself and friends the probable impossibility of delivery *per vaginam*, and that even were there a bare chance of success by evisceration, she would, in her exhausted condition, incur greater risk from the operation under such circumstances than from abdominal section, the latter operation was assented to.

The case was so urgent as to admit of no delay, and we were therefore obliged to proceed with less assistance than I could have desired.

The patient took a full dose of fluid extract of ergot with a little brandy, after which ether was administered. When under its influence, she was placed on a table, in the ordinary position for ovariectomy. I now, standing at her right, and while the abdomen was carefully supported on either side by assistants, with a common scalpel made an incision in the median line from a little above the umbilicus nearly to the pubes, which was soon carried through the abdominal walls and the uterus exposed. This organ was then incised from the fundus downward about six inches, the knife being used very cautiously until the cavity was opened and

* She had rachitis when a child.

the liquor amnii evacuated. On carrying my right hand into the uterus, I readily seized the feet (which were on the left side, it being a vertex presentation), and with little delay extracted the body, but some difficulty was experienced in delivering the head, occasioned by the powerful and unremitting uterine contractions, intensified, as I suppose, by the ergot. This, however, was soon accomplished, and the little fellow—a boy of eight pounds—cried lustily. Without waiting to sever the cord, an assistant supporting the child, I again introduced the hand in search of the placenta. This was attached on the left side about midway between the neck and fundus, and about one-third of it was detached. The remainder was readily separated, but its extraction, which was soon accomplished, with the membranes, was by no means an easy task. I had not anticipated so powerful muscular action in an organ thus mutilated.

There was considerable hemorrhage during the delivery, but not sufficient to cause any serious apprehension, and it ceased at once upon the removal of the placenta, the edges of the uterine wound being nicely approximated by the contractions of that organ. Unquestionably the ergot had fulfilled the indication for which it was given, namely, to control hemorrhage and secure apposition of the cut edges by its action upon the uterine muscular fibres.

After carefully cleansing the parts with sponges dipped in water at blood-heat, and then thoroughly moistening them with artificial serum at the same temperature, the external wound was closed by interrupted sutures placed half an inch apart, and including the entire thickness of the parietes except the peritoneum. These were of silk soaked in boiling wax, as we had no silver wire at hand, a fact that caused me not a little anxiety at the time, although I may say, not only from its use in this but in many other instances, that smooth, well-twisted silk sutures thus prepared approximate very closely in value to those of silver.

The abdomen, which had been unremittingly supported by the hands, was now enveloped in a firm bandage, and the woman put in bed, well covered, and dry heat applied to the extremities, which were rather cool. They soon became warm, however, and as soon as she could swallow she got twenty-five drops of fluid extract of ergot and half a grain of morphia. After the effect of the ether had passed away, the pulse was over 100 and rather feeble. Countenance pale, with that peculiar expression which indicates a marked shock. She was rather restless and *wakeful*. She now got morphia and brandy, with beef-juice, and from 6 P. M., till 3 A. M., she took one grain of morphia in addition to the half-grain which she took at 5 o'clock, just after the operation, and *one quart* of brandy. Just after 3 A. M., she fell into a quiet sleep, which lasted five hours, from which she awoke in excellent condition.

Treatment.—Perfect quiet; anodynes *pro re natâ*, ten drops of fluid extract of ergot and twenty-five drops of tincture of chloride of iron every four hours, the two alternating—the former to be omitted in forty-eight hours and the latter to be continued, if borne by the stomach, until the external wound was healed. The further history of the case contains nothing of special interest. The external wound healed throughout by first intention. A moderate peritonitis followed, but not sufficient at any time to require *heroic* doses of opium. The iron was well borne throughout, and the lochial discharge occurred and continued as after an ordinary case of labor.

Dr. F. L. BIDDLE, of New Haven, Conn., also reports (*New York Medical Record*, March 2d, 1868) a case of Cæsarean section with a similar happy result.

The patient was an unmarried girl, 16 years of age, and had suffered from rickets in infancy. The promontory of the sacrum approached to within an inch and a half of the symphysis pubis. Operation performed by Dr. T. Beers Townsend. He operated in the median line, and delivered a living male child, weighing 8 lbs. 3 oz. The mother had a good recovery.

II. DISEASES OF WOMEN.

Diagnosis of Ovarian Disease.

Dr. ALFRED L. LOOMIS, Professor of Institutes and Practice of Medicine, University of New York (*Medical Record*, February 1st, 1868), says:

Ovaries.—The ovaries in a normal state lie in the pelvic cavity, and their position cannot be determined by physical exploration; but when they become the seat of those forms of disease which cause their enlargement, and have attained such dimensions that there is no longer room for them in the pelvic cavity, they ascend above the brim of the pelvis, and occupy more or less space among the abdominal organs. As they pass out of the pelvis they are first noticed in the right or left inguinal region, according as the right or left ovary is affected, and they are then recognized as ovarian tumors. Often, before these ovarian enlargements have attained sufficient size to attract the attention of the patient, they will have reached a central position in the abdominal cavity. They are of more frequent occurrence than all other forms of abdominal tumors, and their existence is determined almost exclusively by the physical signs which they furnish.

Inspection.—In the early part of their development an uneven projection or prominence of one part of the abdomen will disclose the seat of the tumor, occupying usually the iliac or lumbar region of one side, and extending upward to or beyond the umbilicus; while in more advanced cases no irregularity will be visible, but the rounded form of the abdomen (while the patient lies on her back) offers a strong contrast to the flattened oval appearance of ascites, or the central rounded form of a uterus distended by pregnancy.

Palpation.—Ovarian tumors, when small, have a firm, elastic feel; but when large, they are soft and fluctuating. In some cases, by passing the hand gently over the abdomen, the extent of the tumor will be readily appreciated. At other times, the limits of the tumor cannot be ascertained by gentle palpation, for it occupies the whole of the abdomen, except the concavity of the diaphragm. In such cases, by making firm but not forcible pressure on various parts of the abdomen, we often detect at once a general sense of fluctuation, and ascertain inequalities which neither the eye nor the hand, when passed gently over the surface, will enable us to detect; and sometimes if the abdomen is not tense, we can feel masses which convey the impression of more or less flattened or spherical bodies attached to the inside of a fluctuating tumor. In some cases, the sense of fluctuation is very indistinct; in others it is even more evident than in cases of extensive ascites.

Percussion.—The sound elicited on percussion is flat over that portion of the abdomen where the tumor comes in contact with the interior surface of the abdominal wall; while at the side and above, where the intestines have been pushed aside and upward by the tumor, the percussion-sound will be tympanitic; by this

change in the percussion-sound we are enabled to mark out the boundaries of the tumor.

Differential Diagnosis.—Ovarian tumors may be confounded in their diagnosis with *uterine enlargements* (as pregnancy, fibroid tumors of the uterus, etc.), *ascites*, *hydatids of the omentum*, *fecal accumulations in the intestines*, and *enlargements of the liver, spleen, and kidney*.

They are distinguished from pregnancy by a stethoscopic examination of the tumor, which reveals in the one case the sounds of the foetal heart, and in the other their absence. They are distinguished from uterine tumors by their different consistency, by the difference in their outline, by the difference in their connection and relative position to the uterus, and by the fact that in uterine tumors the cavity of the uterus, as determined by the uterine sound, is always elongated. The diagnosis between ovarian and abdominal dropsy is made: 1st, by observing the difference in the shape of the abdomen when the patient lies on her back: ovarian tumors project forward in the centre, while in ascites the abdominal enlargement is uniform. 2d. In ovarian tumors the percussion-sound is dull as high as the tumor extends, while at the same time there will be tympanitic resonance in the most depending portion of the abdominal cavity; in ascites the most depending portion of the abdomen is always flat, the percussion-resonance being confined to the epigastric and umbilical region. 3d. In ovarian dropsy the relative line of flatness and resonance is not altered by change in the position of the patient, which is not the case in ascites. Hydatids of the omentum form a class of tumors which you will be unable by physical signs to distinguish from ovarian tumors. The fact, however, that these omental enlargements are first noticed above the umbilicus, and gradually enlarge downward, while ovarian are first noticed low down in the abdomen and gradually enlarge upward, will in most cases be sufficient for a diagnosis.

Fecal accumulations in the large intestines may be mistaken for ovarian tumors; the peculiar feel of such tumors (which has already been described) will, however, enable you to distinguish them from ovarian tumors.

Ovariectomy.

Several useful suggestions in the performance of this important operation have been recently brought before the public. We may commence with that of Dr. H. R. STORER of Boston, read in December last before the New York Academy of Medicine (New York *Medical Gazette*, December 28th), when he detailed the case of a lady upon whom he had recently operated. The points of peculiar interest in the case were the following: First, he had operated during the menstrual period, a time which is generally avoided; Mr. Spencer Wells, who was present at the operation, stating at the time that he had never operated while the menstrual flow was present. No ill effects whatever had been noticed from this cause in this case. Second, he had used a new method of securing the pedicle. It was not replaced in the cavity of the abdomen, nor brought outside, but fixed by a method which he terms "pocketing;" that is, the raw surface of the pedicle is brought up so as to be just behind and adjoining the wound in the parietes; the sutures are carried through both, thus answering the double purpose of ligature and suture. He thought this method had as its advantages that it was free from the dangers of peritonitis, septicæmia, and of primary hemorrhage attendant upon abandonment of the pedicle,

from the dangers of traction upon the uterus, and interference with gestation which might follow the external treatment of the pedicle. By the present method the pedicle is prevented from bleeding by its pressure against the abdominal walls; sloughing will not take place, as the pedicle is not strangulated by a ligature; and no large wound has to be healed, as the integuments of the abdomen are brought nearly or quite together. He did not of course mean to claim that this method would be applicable to all cases, but believed that it would be open to fewer objections than any other; none were free from them. He enumerated the recognized methods, including the intra-peritoneal, with its subdivision according as the ligature, wire suture, acupressure, or actual canterly were used; and the extra-peritoneal, with its varieties, besides the dissecting up of the Fallopian tubes from the mass, and leaving them *in situ*. He exhibited his "clamp shield," by means of which, while the pedicle is firmly held, difficult dissections can be made without fear of wounding the rectum, bladder, vagina, or great vessels; by means of a universal joint in the blades, their direction can be changed at will. He mentioned some other cases of abdominal section, with particular reference to the testimony they gave for the non-ovular theory of menstruation. In these a sanguinolent vaginal discharge, distinct from that which often follows ovariectomy, had been observed, and in one it had continued at the regular periods, for a number of months, although both ovaries had been extirpated.

In the January number of the *American Journ. Med. Sciences*, Dr. WM. G. BULLOCK, of Savannah, Ga., relates a case of ovariectomy, in which the pedicle was tied with a silver-wire ligature, returned, and the wire left to be sacculated. On opening the sac, an amber-colored liquid escaped freely, pouring into a vessel held to receive it, so that very little was lost, and was estimated to amount to if not exceed eight quarts. The sac was unilocular and studded all over its internal surface with innumerable granular bodies like hydatids, and weighed twenty-three ounces when removed.

The question now arose, whether the sac should be allowed to remain and be injected with some stimulating liquid, or excised? Finding it loose, in a great part of its extent, and but slightly adherent in others, after a short consultation it was determined to remove it. This proved to be not so easy a task, for it was very adherent to the umbilical region as elsewhere, and to parts within the pelvis, particularly to the left ovary, and to the round ligament of the right side. There were no adhesions to the stomach, intestines, or liver. After some difficulty in separating the adhesions and peeling it off as it were from the peritoneum, and getting at its pedicle, this last was firmly secured, as advised by Dr. J. Marion Sims, by a silver-wire ligature, replaced in its normal position, and the sac removed entire. The peritoneum presented generally a dark red appearance, which attracted the attention of us all. The abdomen was then sponged out with a soft sponge wrung out of warm water, and the lips of the external wound brought together and closed by silver-wire sutures. A flannel compress was next applied, and over this a six-tailed flannel binder. There being no tension, adhesive straps were not applied. The patient was then removed from the table, placed comfortably in bed, and a full dose of morphia administered, which was directed to be continued in smaller doses every four hours through the night.

Twenty-five days after the operation an abscess was opened in the hypogastric region, which discharged about a pint of pus. A question arises whether this ab-

cess arose from the sloughing of the remains of the pedicle, or the presence of the ligature. The patient made a good recovery.

Some observations on ovariectomy as practised in Europe, are contributed to the *Boston Medical and Surgical Journal*, January 2d, by Dr. G. KIMBALL, of Lowell, Mass. Of M. Kœberlé, of Strasburg, he remarks, that in one or two particulars he differs from operators in general. In treating the pedicle he always endeavors, if possible, to secure it outside. He first embraces it in a loop of strong wire, which he applies by means of an instrument of his own contrivance, and in every respect similar to an *ecraseur*, only of a smaller size, not more than five inches in length. With this instrument the pedicle is constricted to a degree of tightness little short of laceration, after which a silk ligature is applied immediately below the point of constriction, and the wire immediately detached. The cyst is next cut away, and the stump held outside.

This part of the arrangement is effected by transfixing the free portion of the severed pedicle with a slender trocar and canula, the trocar being withdrawn, and the silver canula allowed to remain crosswise of the incision.

Another peculiarity consists in his placing in the lower angle of the incision a *glass tube* for the purpose of draining off any probable or possible accumulation of fluid that might occur in the pelvic cavity. By means of this same tube, too, antiseptic fluids may be readily thrown into the peritoneal cavity with the view of anticipating or relieving the effects of blood poisoning.

Treatment after operation is simple,—no medication of any kind, except occasionally with opium, when urgently needed to quiet pain; nourishment of simplest form at first, and increased in strength and quantity as the patient convalesces. Where there is a tendency to sinking, or the stomach revolts, enemata of animal broths are resorted to. Independently, however, of any advantages that may be supposed to attach to the peculiarities of M. Kœberlé's manner of operating, there is another and probably more important consideration to be taken into account, in estimating his general success, and especially in connection with cases of extreme difficulty and embarrassment, viz., the unremitting and scrupulously careful attention he gives to his patient in all the minute, though not less important, details of after-treatment.

As regards Mr. Wells's method of operating, it has been fully set forth in the large number of operations which from time to time have appeared in the medical periodicals in London, but more especially in his volume of 114 cases, published in 1865.

It is proper to remark, however, that in *treating the pedicle* he now invariably uses the clamp, if *possible*. Several times he tried the cautery plan of Mr. Baker Brown, but with indifferent success. Latterly he has abandoned the cautery entirely.

He prefers the short incision, and avoids, if possible, extending it above the umbilicus. He is satisfied that in observing this rule the rate of mortality is lessened. For ligatures and sutures, he uses silk in preference to the silver or iron wire.

In applying the dressings, having first made a pretty free application of the persulphate of iron to the free portion of the pedicle, he levels up the depressed parietes, by laying in the hollow spaces carded cotton or soft cotton cloth. Over this he applies broad strips of adhesive plaster, not less than eighteen inches in

length, and extending from the epigastrium down to the lower angle of the incision, where the pedicle is kept confined outside by the clamp.

Subsequent treatment, very simple; opium not given, except as an anodyne, and generally limited to the first few hours after the operation. Nourishment sparingly allowed for the first twenty-four hours, and cautiously increased from day to day, as the circumstances of the case may suggest.

Mr. Baker Brown comes next. He claims that of the last forty-five cases of complete ovariectomy, with the pedicle treated by *actual cautery*, there were forty recoveries and five deaths.

In view of the remarkable results following the use of the cautery, as shown by the above statement, one would be led to suppose that every other method of treating the pedicle would be at once abandoned; and yet it has failed to give satisfaction in the hands of other operators. It was resorted to several times by Mr. Spencer Wells, but with such indifferent success that he was induced to give it up altogether. The same has been the case with most other ovariectomists in England. The chief objection raised against it is its insufficiency in controlling hemorrhage; so that to meet this difficulty it has been found necessary oftentimes to resort either to the clamp or to the ligature as a supplementary procedure.

On the other hand, Mr. Brown claims that in the use of the cautery plan he experiences no trouble from bleeding, and in explanation of its failure in the hands of other surgeons, says that with them the pedicle is severed *too quickly*, that the cauterizing iron has been too intensely heated. His plan is never to use the cauterizing iron at a more than red heat,—passing it very slowly to and fro across the pedicle, occupying several minutes in the process, and holding it all the while in the grasp of the clamp till it is quite certain that all tendency to bleeding has passed. He has never had an instance of secondary hemorrhage in connection with this method of procedure.

He claims also to have found the cautery equally serviceable in controlling bleeding from parts torn on account of adhesions, especially where, on account of the large number of small vessels, the application of ligatures would be impossible. He believes, and with good reason, undoubtedly, that some attention should be given to *preparing* the patient for an operation. For this purpose, however, he relies more upon the observance of certain hygienic rules, than upon any special plan of medication,—seeing to it that, as far as the circumstances of the case will permit, the functions of the system generally are in a healthy state.

The *condition of the skin*, he believes, has much to do in determining the result of an operation. He never operates, he says, upon a patient with a *dry skin*.

In regard to after-treatment, Mr. Brown pursues the same plan that is ordinarily observed by other operators.

Mr. THOS. BRYANT, of Guy's Hospital, has a manner of operating, in some points different from that of either of the surgeons already named. In regard to the incision through the parietes, his views are very similar to those of Mr. Wells, preferring, as a rule, that it should be only of sufficient length to admit of the easy withdrawal of the tumor. He does not, however, perceive any special disadvantage in the long incision, especially if the tumor be polycystic, or of large size. Indeed, in such cases he prefers the long incision, and more especially also in those cases where there are extensive adhesions, because parts so involved can thus be more readily and safely dealt with.

"As to the pedicle," he says, "I believe by far the best practice is to ligature

it in two or more parts, to cut off the ligature and drop the whole inside. I use good whipcord ligatures; the cautery I dislike, feeling it is an unsafe practice.

"In closing the wound, I use deep sutures, including the peritoneum; though on this point I am not particular. I prefer silk to silver, as being no more irritating and less troublesome in removal. They should be insulated about an inch apart, with intermediate superficial sutures through the skin."

In the after-treatment he gives opium in moderate doses, merely to allay pain and secure rest. He prefers administering it by the rectum.

For diet, he allows beef tea, milk and arrow root for the first few days, if the stomach will tolerate it; and these should be given cold. In case of continued sickness from chloroform, nourishment should be given by the rectum.

"As soon as the stomach will admit, fresh meat and stimulants should be cautiously given, the object being in these cases, as in all others of general surgery, to keep up the powers of the patient, and so enable nature to complete the work."

DR. WILLIAM WARREN GREENE, Professor of Surgery in the Maine Medical School (*Boston Medical and Surgical Journal*, May, 1868, after giving eight cases of Ovariectomy, six being successful (one of them having both ovaries removed) makes the following

General Remarks.—From a thorough study of my own cases, and of those which I have seen in the practice of others, with a somewhat careful examination of the literature of ovariectomy, I am led to the following conclusions.

1st. That, where the tumor is large, it is impossible to form any accurate estimate of the extent or strength of adhesions that may exist, before reducing the bulk by tapping, and even then extensive visceral adhesions may be present which cannot positively be detected. It is not safe to argue the absence of such attachments because the patient has not suffered from marked symptoms of peritonitis, for the reason that such an inflammation often occurs sufficient to produce very firm adhesions, and yet so latent as to escape notice.

2d. The existence of adhesions is no contraindication for an operation, but on the other hand, such cases, even when the bands are numerous and strong, do the best as a rule. They suffer less shock and are less liable to peritonitis. The membranes seem, by the previous morbid action, to have acquired a tolerance of such disturbing causes as would awaken inflammation in one that had never been diseased.

3d. In preparing the patient great care should be taken to secure a healthy state of the secretions, and the system be sufficiently impressed with the muriated tincture of iron to insure plasticity of the blood.

4th. The utmost gentleness and delicacy should be observed in all manipulations by surgeon and assistants. Strange as it may seem, this most important rule is too often violated, to my personal knowledge. There is no excuse for unnecessary handling of parts by rough, dry, or cold hands, or exposure to the air a moment after the operation is completed.

5th. A most powerful prophylactic against shock and subsequent inflammation is the free use of artificial serum (common salt 3j, albumen 3j, pure water Oj) at blood heat. Keep the parts thoroughly and constantly moist with it.

While I believe that this serum, acting as a mechanical protection to the parts, is in this way of great advantage, I still attach much more importance to the heat. A moment's reflection will convince any one, theoretically, that a delicate serous

membrane suddenly exposed to the air, and its temperature reduced twenty or thirty degrees, and maintained at that point for any length of time, is much more liable to inflammation than one which has been carefully kept at or very near its ordinary heat, and that too by the application of a liquid almost precisely like its natural secretion; and my own cases of abdominal section afford to me conclusive evidence that this is true. In none of my cases has there been anything like collapse.

Nor is this application of heat to be restricted to this class of operations. I have latterly discarded the use of cold water for sponging during any operation which exposes a large raw surface. In large amputations, in dissections for the removal of large tumors, especially about the neck and trunk, I am thoroughly convinced that the shock is very much less, as also the danger of inflammation, if hot water be used instead of cold. The cases where hemorrhage requires the substitution of cold are so exceptional as not to invalidate the rule. I would much prefer multiplying ligatures to chilling the parts.

I prefer an elevated temperature of the room, but consider the moisture of the atmosphere of little importance, comparatively.

6th. The treatment of the pedicle in the cases reported seems to me more reasonable than any other. The use of the clamp for the fastening of the pedicle in the external wound by any means is only applicable to long pedicles, and even then, in case of peritonitis with much distension, is a serious complication, as also in subsequent pregnancies. To this is to be added the danger of intestinal strangulation. The same objections obtain against Dr. Storer's recent proposal to pocket the pedicle with additional ones in case primary union fails. The actual cautery is unreliable, and so is the *écraseur* notwithstanding the few cases in which the latter has been successfully used.

The cutting of the ligatures short and dropping the stump back into the abdomen would of course be the plan, if safe. But in the first place the immunity from sloughing is by no means established, and in very many if not all the cases there must be, aside from any such process, a collection of fluids, serous, sero-sanguinolent, or purulent, more or less, which had much better be readily discharged than left to the care of the absorbents. (I know of one case that was reported cured by this operation, that died, after all, of septicæmia.) In all my cases there was a vaginal discharge from the first, usually slight and varying in character. By carrying the ligatures down through the posterior *cul-de-sac*, all danger from this source is obviated. The opening is made at the most dependent part of the pelvic cavity, where the fluids will naturally gravitate, and where they will thus find a ready exit. The pedicle is more effectually secured by the ligatures than by any other means, and if carried through the vagina they produce no noticeable irritation, and after their work is done no foreign body is left in the abdomen, and at the same time the external wound is allowed to heal by first intention.

But another great value of the opening into the vagina is the facility which it affords for washing out the abdominal cavity, to which procedure I attach so much importance.*

* After trying several different methods for passing the ligatures through the canal, I prefer the following. Pass into the vagina a pair of common, uterine dressing forceps, with the blades closed, and push their point upwards in the *cul-de-sac* until, looking into the pelvic cavity, the surgeon sees the membranes stretched over them behind the uterus. While in this position open the blades a little, pass a bis-

The after-treatment must be conducted upon general principles, and not according to any fixed rules. I think the cases very rare where large quantities of opium are required or can be borne without harm.

Finally, the case must be a very peculiar and urgent one upon which I would operate and leave the patient for after-treatment in the hands of another person, except it be one who was experienced in the management of such cases.

The difficulties that the surgeon occasionally has to contend with are illustrated in a case in the *St. Louis Medical Reporter* for May 1st. Dr. J. B. BOND, of St. Louis, relates the case of a woman, 45 years of age, who called for advice concerning a large tumor in the right iliac region. He says:

She was much emaciated, and had been constantly confined to bed for two or three weeks.

The tumor was first noticed by her about eight months previously, but had given her no great inconvenience until about two months before I saw her; up to which time, and at intervals afterwards, she performed her customary household duties.

The tumor was found to be round and generally elastic; it pointed slightly about two inches to the right of the linea alba, at which place fluctuation could be discovered. At this time the tumor was apparently five inches in diameter. I at once diagnosed it to be a unilocular ovarian cyst. It was then, and had been throughout its growth, quite movable, falling forward or to either side with corresponding changes of posture. In fact, no attachments could be discerned.

Wishing to be absolutely certain of the diagnosis, as well as to relieve present pain, a trocar was introduced at the point of fluctuation, and carefully retained until the cyst was emptied of about twenty ounces of healthy pus. This gave the patient great relief; but the cyst refilled in the course of two weeks, and was largely increased in size.

After consulting with several eminent gentlemen, extirpation of the tumor was determined upon, as affording the only chance of life to the patient, who was sinking slowly and demanded the operation, after being fully advised of the hazard attending it.

On the 8th day of October, 1867, with the assistance of Drs. Collins, Williams, and Ragland, the operation was performed.

An incision was made five inches long in the linea alba, commencing at the pubic bone, through the integument and muscles, leaving the peritoneum intact until the last, which was then carefully divided on the director.

This opening brought the tumor into full view, but was insufficient to permit its extrusion; a T incision was then extended over the tumor, but all efforts to evolve it were, to our surprise and chagrin, unavailing.

The tumor was fully seven inches in diameter; was free from adhesions over the entire surface, except at the posterior portion, where it inclosed the aorta and a considerable space of the vertebral column, and resisted all our efforts to detach it. After vainly endeavoring for thirty minutes to break up these adhesions, the attempt was abandoned, the contents of the tumor evacuated, and the abdominal

toury through the septum between them, close them, pass through the opening, seize the ligatures and drag them downward out through the vagina.

I obtained the idea of thus disposing of the ligatures, and also of using artificial serum, from Prof. H. R. Peaslee, of New York.

incisions closed with the interrupted silk suture. The patient was under the influence of chloroform exactly an hour without any bad symptoms from it.

Not over eight ounces of blood were lost during the operation, although the internal epigastric artery was divided in making the T incision.

The patient was put to bed, and a full opiate administered; she was nearly as strong as before the operation, and said she felt no pain.

No untoward symptoms appeared until the fourth day, when peritoneal inflammation of a high grade was set up, and on the fifth day she died.

The chief interest of this case, to my mind, was the impossibility of ascertaining, *until too late*, the great and insurmountable adhesions which had taken place; which, had they been known, would have utterly precluded the operation for extirpation. The perfect mobility of the tumor led us to the almost positive conclusion that the pedicle was very small, as it was judged impossible for so large a body to move so freely in the abdominal cavity, unless such was the case.

Finally, we may conclude our already long article on this operation with the facts collected by THOMAS KEITH, F.R.C.S., who gives, in a recent number of the *Lancet*, a tabulated statement of fifty-one cases of ovariectomy which he has performed, of which the following is a summary:

Of 51 operations, there were 40 recoveries and 11 deaths. The average duration of the disease was a little more than two years, and 28 had been tapped once, or oftener, before the operation. The youngest was 16, the eldest 68 years of age; 26 were married, 25 unmarried. Under 22 and above 52, all recovered. Of 16 above 45, all recovered save one. Of 5 cases in which both ovaries were removed, 4 recovered. The average weight of the tumors was 34 lbs.; that of the fatal cases 42 lbs. The smallest was a semi-solid mass of 7 lbs., in a case where a large cyst had burst a fortnight before. The largest was upwards of 120 lbs. A great part of it had to be dissected out. Its removal was the most formidable proceeding he was ever concerned in, and it is, so far as he was aware, the largest tumor ever removed successfully from the living body. Adhesions, if not in the pelvis, do not seem to influence much the result of ovariectomy. In the cases of single, or nearly single, unattached cysts, nothing could be simpler than the operation, and in several the cicatrix is now not more noticeable than the umbilicus. The majority, however, were extremely severe operations, in not a few extending over two hours; and the recovery of many was very remarkable. Only three were absolutely unilocular cysts. In 9 cases the tumor was throughout semi-solid. All of these recovered save one. These tumors were cut into and broken up by the hand, and removed through as small an incision as possible.

Tumors of the Uterus.

Dr. SAXINGER, Assistant in Prof. Seyfert's Women's Clinic, has an article in the *Vierteljahrschrift für die Praktische Heilkunde*, published in Prague (2d vol. for 1868), in which, after stating that he saw 1181 cases in all treated there, he gives an abstract of the fibroid tumors and polypi which came under his observation. He divides the polypi into mucoid, or hypertrophies of the mucous membrane, and fibrous, or hypertrophies of the submucous cellular tissue. There were 7 cases of the former, and 10 of the latter. The polypus was removed in 15 instances; in 12 by excision, and in 3 by torsion; and in one case it sloughed away of itself.

Only one of the 17 died, and she was dying when she entered; of course no operation was performed on her.

The ages of these women were from 29 to 49; most of them between 30 and 40; all but 2 had had children, and 7 of them were suffering with dysmenorrhœa and menorrhagia. The largest of the polypi was of the size of a child's head, and hung from the anterior lip of the uterus. In no case was there bleeding which could not readily be controlled by the injection of cold water, and by the use of the tampon.

Dr. Säxinger reports also 2 cases of placental, or fibrinous polypus (the first name having been given by Braun, and the second by Kiwisch). These always originate in a blood-clot, and almost always after a recent delivery.

The fibroid tumors of the uterus (which attain a larger size than any others in the body) he divides into subserous, interstitial or intramascular,* and submucous. He gives an instance of a calcareous degeneration of one of these tumors, which occurred in 1854, and which was not discovered until labor was far advanced.

The surgeon, when he first saw the woman, found her already exhausted by useless pains, and the two midwives in great anxiety. On examination he found a hard body, which he took for a child's head already in the vagina, and above this he felt a child's hand, but not the os uteri. He applied the forceps to the supposed head, and endeavored to extract it, but had to cease his efforts on account of the patient being suddenly attacked by dyspnœa. On further examination he found that the hard body was suspended by a narrow and pliable pedicle, which he cut across, and then was able to turn the child, after which delivery took place without difficulty. The tumor was found on examination to be composed entirely of stone, and to present, in section, the appearance of an ossified brain. It was about the size of a fist, pear-shaped, and yellowish in color.

Dr. Säxinger gives a partial list of other cases of osseous degeneration. The earliest is that mentioned by Hippocrates, where a woman of Thessaly, 60 years of age, who in her youth had always suffered great pain in coitus, and who had never been pregnant, ate leeks one day, after which she had pains like those of labor, and suddenly, on standing up, felt something rough pass into her vagina. She fainted, and another woman extracted a stone, which was stated to be like the whirl of a spindle.

Bartholin reports having found a stone weighing four pounds in the cavity of the uterus.

Solius reports the case of an old nun, who, after having suffered for months, was delivered of a stone, like a goose's egg; and finally, Schenk reports that a woman, who had been in labor three weeks, made a solemn vow, and then passed from her vagina three stones, the size of a goose's egg, a hen's egg, and a nut; after which the birth of the child followed.

Acupuncture in Diagnosis of Tumors of the Uterus.

Dr. GUÉNIOT, Surgeon of the Hospice des Enfants-Assistés, has an article in the *Archives Générales* for April, 1868, in which he mentions a case of a fibrous intra-uterine polypus, occurring in the ward of M. Richet, of La Pitié, which was

* Intramural, of Simpson.

suspected to be a partial inversion of the womb, as it appeared to be covered by a congested mucous membrane, and the uterine sound could be introduced before, behind, and at each side of it, a distance of 1 to 2½ inches.

It was at last determined to be a tumor by acupuncture, as it was insensible and very dense, bending even the needles used to penetrate it. Dr. Guéniot states that the uterus retains its sensibility when inverted, and that congestion and inflammation would have a tendency to soften its tissue, rather than to harden it.

Fibrous Tumors of the Uterus.

Dr. FRANCIS MINOT, of Boston (*Medical and Surgical Journal*, February 27th, 1868), related before the Boston Society for Medical Improvement, a case æt. 40, single, domestic, who was suddenly attacked with profuse and alarming uterine hemorrhage. For twenty-four hours she had been unable to pass water. On digital examination, a solid tumor, about as large as a goose egg, was found occupying the upper part of the vagina. A large quantity of urine having been drawn off by the catheter, the tumor was carefully examined. The whole surface of the tumor was quite smooth, and it was only after careful search that a small tubercle was found, with a minute opening, into which the finger was gradually insinuated, and then carried freely in every direction between the tumor and the cervix, showing that the latter was expanded over the former, and that no adhesions existed between them. The tumor was also larger above than below. It was not, therefore, a polypus, as had at first been supposed. The enlarged uterus could be felt projecting considerably above the pubis, and the whole mass could be pushed upward by the finger.

The general health of the patient had been good, but for several years menstruation had been profuse. For the past five years she had flowed excessively, especially in the spring and fall, sometimes, she thought, losing a pint at a time. She had become quite pale and waxy-looking. Had recently undergone much fatigue and exposure at night. Her health had failed considerably, though she still attended to her duties as cook. An operation for the removal of the tumor was advised, to which she consented.

October 29th, 1866, patient was etherized, the os uterî opened on each side with scissors, and the tumor seized with strong double hooks and drawn down. The mass was adherent to the walls of the uterus. A portion as large as the fist was cut off and removed; but owing to the situation of the remainder in the upper part of the pelvis, and its adherence to the uterus, it was found impossible to remove it entire. Portions were successively torn off, and the rest was lacerated as extensively as possible with the scissors. The operation lasted two hours. Not more than half a pint of blood was lost. For several days there was a profuse fetid discharge with small shreds, and masses of a considerable size were removed from the vagina with the dressing-forceps. November 14th, sixteen days after the operation, a large mass escaped from the vagina while patient was straining at stool. It was so offensive that it was thrown away before Dr. MINOT had an opportunity of seeing it. It was said to be about six inches long. From this time all offensive discharge ceased. Convalescence was retarded by a severe cold, but she began to walk out, November 21st, and soon resumed her duties as cook. October 28th, a year after the operation, she was perfectly well and strong, and had gained much flesh. There had been no hemorrhage since the operation, and

the catamenia had apparently ceased. The tumor was estimated to have weighed two or three pounds.

The *Chicago Medical Journal* contains a report of the successful removal, by abdominal section, of a fibrous tumor of the uterus from a lady of that city, by Dr. WALTER BURNHAM, of Lowell, Mass. The patient had been previously tapped for ascites six times, and seventy-eight quarts of serum had been drawn off. From Dr. Burnham's account of the operation we extract the following:

I advised an exploring operation by a short incision through the abdominal walls, with a view to ascertain the kind, character, and extent of the adhesions, if any there were, so that, if owing to them, it was not deemed feasible to attempt the removal of the tumor, the patient might be subjected to the least possible risk. On the following day, I met Dr. Dodge, the two Drs. Clark, and Dr. Seeley, in consultation, and they fully concurred with my views concerning an operation. Accordingly, the patient was placed on a lounge, and chloroform was administered until she was under its influence. I then made an incision through the integuments down to the peritoneum, extending from an inch below the umbilicus three inches downward in the median line; then, raising the peritoneum carefully, I divided it and passed the canula of a No. 10 trocar into the abdominal cavity, removing about fifteen pounds of a serous fluid; after which I increased the opening in the membrane, so that it corresponded with the original incision, by which means I was enabled to gain a free examination of the tumor, which I found sustained by a pedicle from the broad ligament of the uterus. There were, also, firm adhesions to the intestines to a considerable extent, and one of the Fallopian tubes was attached throughout its entire length. I thought, however, that these might be separated, and, with that view, extended my first incision three inches upward (avoiding the umbilicus), and about two inches downward, thus gaining ample room to turn the mass around, and by presenting its smallest diameter, to bring it to the surface, that I might better remove the adhesions. I then carefully dissected off the attachments to the intestines and the Fallopian tube, being obliged to ligate and remove a portion of the omentum, which was so thoroughly incorporated with the tumor that it could not be separated. I next passed a double silk ligature around the pedicle, and drew it tightly, holding it firmly for some time before securing it, to prevent the duplication of membrane from slipping. I then tied it, and separated the pedicle about half an inch from the ligature.

The wound was dressed by approximating the edges with five (5) wire sutures (bringing the ligatures out at the bottom), and covered with strips of adhesive plaster, extending from one side to the other; above these, a compress of cotton batting was applied, and the whole secured by a broad bandage. The patient was then removed to bed, and a mild anodyne administered, together with nutritious drinks, *p. r. n.* She was left in charge of Dr. Seeley.

The patient bore the operation well, and slept the night after without an opiate. No special treatment was required, except simple dressings and nourishment. The wound healed rapidly, and five months after there had been no recurrence of the ascites, and the patient's general health was excellent.

In the *American Journal of the Medical Sciences*, for January, 1868, Dr. JOSEPH WORSTER, of New York, relates a case of fibrous tumor of the uterus, which was successfully treated by incisions into its substance; the os and cervix being previously dilated by means of slips of *laminaria digitata*, and subsequent extraction.

Mrs. K., native of England, aged twenty-seven years, of lymphatico-sanguineous temperament, presented herself to me, January 10th, 1866, to be treated for a uterine tumor, attended with much hemorrhage, of the existence of which she had become cognizant about three years before. Six years ago she had given birth to a child, after a perfectly natural labor, but had ever since been troubled with more or less sanguineous discharge. She had consulted several medical men, both in England and this country, but all had declined to interfere with it, owing to its extensive attachment to the inside of the uterus.

On examination, the os was found patulous; on further dilatation, the tumor was found to fill the uterine cavity entirely, having an attachment extending from the os internum for two-thirds of the entire length of the uterus, which was greatly distended. The surface of the tumor so felt was smooth.

In its longitudinal diameter it measured six and three-quarter inches, in its transverse, four and a half inches; and did not bleed on touch, as polypus does. Hemorrhage was profuse and frequent, attended with repeated syncope, palpitation of heart, pain in back, œdema of feet and ankles, and anasarca throughout; indeed, a general appearance of anæmia. I first attempted, by means of the introduction of slips of the laminaria digitata (sea-tangle), to dilate the os uteri sufficiently to encircle the tumor with a ligature; but this, owing to the width of its base, was found to be impossible. I then determined, by repeatedly incising the tumor, by means of a uterotome (Civiale's instrument for the urethra, using it as a hysterotome), to cut off the supply of blood and effect its disintegration, keeping up the dilatation of the os by the means above mentioned, and using astringents to restrain the hemorrhage. I made, on twelve different occasions, from fifteen to twenty incisions into the substance of the tumor, on either side of its base, sometimes first through the base, right and left. Much blood was at first lost, but the bleeding ultimately ceased, and a considerable reduction in the size of the tumor took place. These operations occupied the time between the 22d of January and 18th of February, a period of twenty-seven days. Desirous of obtaining more room within the uterine cavity, for the continuance of my operations, I made persistent efforts at further dilatation of the os and cervix uteri, as follows:

February 20th. Introduced four slips of laminaria, which were allowed to remain until fully expanded: fourteen times that of the original size of the slip; a fact not generally known.

22d. Introduced a long sponge tent, three-quarters of an inch in diameter and three inches long, leaving it in for two and a half days.

25th. Patient being placed under the influence of chloroform by my son, Dr. W. P. Worster, I introduced into the os *thirteen pieces of laminaria*, measuring two inches in diameter; a very severe form of painful uterine contraction ensued, which caused me to remove them prematurely. The effect, however, was to cause the tumor to protrude at the os, from the expanding of the laminaria from above downward. The fetor of the discharge was at this time intolerable, and coagula escaped daily, causing much debility. The bulk of the tumor is rapidly diminishing.

March 1st. Introduced an India-rubber dilator, and continued the dilatation until the 8th, when I succeeded in introducing the fingers and part of the left hand, on which I passed up a pair of vulsellum forceps, and having obtained a firm hold of the tumor, after a somewhat protracted and forcible traction, *I extracted the entire tumor*. The base had become softened by disintegration, from

the cutting off of the supply of blood, which facilitated the dislodging of the mass. The debris, balance of the pedicle, or attached portion, followed in a few days.

15th. The position of the uterus is normal. The patient is doing well, but very weak from loss of blood, the shock of the operation, etc.; under the use of brandy in very profuse quantities, from the beginning of these operations, tonics, including quinia, iron, and the chlorate of potass, she regained her strength, and the natural rosy tint of her complexion, previously as white as marble.

29th. She sailed for the West Indies, being in good health and spirits, and delighted at her riddance from her troublesome companion.

This case may be stated as one of fibrous tumor developed in the parietes of the uterus, covered by a thin layer of uterine fibre, having thus a broad attachment to the side of the organ; a true intramural hysteroma; not a pediculated polypus, covered only with mucous membrane. The treatment consisted of two parts: one, the incisions into the substance of the tumor, by which its vitality and growth were diminished, and its substance disintegrated; the other, the enucleation of the tumor itself from its investing layer of uterine muscular fibre, and its extraction.

Ruptured Perineum treated by a New Method.

Mr. JOSIAH S. HALE reports a case of ruptured perineum operated on at the Massachusetts General Hospital by Dr. S. CABOT, by a new method.

In the number of the same Journal for August 16th, 1866, Dr. Cabot reported two cases of "Ruptured Perineum successfully treated by a New Method." Since that time he has operated in six cases, and has varied the method by increasing the number of needles used from *four* to *eight* (in the eighth case), and by the omission of deep sutures. Of the eight cases, one only has failed of success, and in that the operation was performed, at the earnest solicitation of the patient, while specific ulcerations were present on the parts.

In the eighth case, the patient, a widow, aged 52 years, very stout, had a rupture extending above the internal sphincter ani muscle, and with prolapse of the uterus. The ruptured surfaces were so widely refreshed that the vagina barely admitted the index finger. In this case, there was union of the entire surfaces by first intention.

The following case, the sixth in order of operation, was the first in which no deep sutures were used.

E. W. S., aged 34 years, entered the hospital Dec. 5th, 1867. Her first child weighed eleven pounds, and at its birth her perineum was completely ruptured. Two years later, an operation was performed for her relief, but was unsuccessful. She has borne three children since. Patient has become much emaciated from almost constant diarrhœa. There is also prolapsus uteri, but not enough to cause her much discomfort.

Dec. 8th.—Operation, with ether, by Dr. Cabot. Patient was placed in lithotomy position. The opposite surfaces of the lacerated parts were freely denuded of their mucous membrane, and the edges of the rupture of the anus refreshed. Ice was used to check the hemorrhage. The sphincter ani muscle was divided on each side, about an inch from the coccyx. Three darning-needles were then passed through the perineum, on each side, about one-fourth of an inch from the rupture, and their points inserted into an almond-shaped piece of cork, in such a way as to

make the corresponding needles of the opposite sides parallel, and to bring the refreshed surfaces into close apposition. The outer ends of the needles were fastened together in pairs. The posterior pair of needles were so placed as to keep the edges of the anal mucous membrane in apposition, and the anterior pair to approximate the edges of the vaginal surface. No deep sutures were used. Superficial sutures were placed between the needles, at the fourchette and on the vaginal surface. Pieces of pasteboard were placed on either side, to support the extremities of the needles, and lint to protect the soft parts. Patient was placed on her side in bed, with her thighs flexed. Catheter to be passed, *p. r. n.* R. Elix. opii gtt. xxx, *p. r. n.*

On the 30th the patient was discharged cured.

Laceration of Perineum—Baker Brown's Operation.

In the Cincinnati Commercial Hospital (*Lancet and Observer*, Feb., 1868) two cases are reported in which this operation was performed by Dr. W. W. DAWSON, with complete success in one and partial success in the other. Quill-sutures inserted deeply were used, which were removed on the third day after the operation. Opium was given freely, and the urine drawn off frequently. The bowels were kept locked up for several days.

Clitoridectomy.

A case is reported (*Cincinnati Lancet and Observer*, February, 1868), by Dr. JAMES T. WHITTAKER, occurring at the Commercial Hospital, under the care of Dr. W. W. DAWSON. Patient presented herself at the Hospital with a tumor occupying and extending above the sinus pudoris, solid in texture, of cartilaginous firmness, smooth and rounded or ovoid above, nodulated and fissured below. Transverse and longitudinal circumference each $6\frac{1}{4}$ inches, diameter, $2\frac{1}{2}$ inches. Diagnosis: hypertrophy of the clitoris, or an outgrowth from the rami of the pubes, embracing in its neck the clitoris. Operation: the tumor was dissected from its attachment to the pubes. The actual cautery had to be used to control hemorrhage. Operation successful. Patient discharged in less than a month.

Vascular Tumors of Os Uteri.

In a paper read before the Medical Section of the British Medical Association, August, 1867, and published in the *British Medical Journal*, January 4, 1868, Dr. FLEETWOOD CHURCHILL, speaks of a disease which he has met with occasionally, viz.: a vascular tumor at the os uteri, exactly like that we find at the meatus urinarius. It varies in size from a pin's head to a raspberry, and, unlike the small polypi found in the same situation, bleeds on the slightest touch. So far as I know, it gives rise to no symptoms but menorrhagia. It can seldom be recognized by the touch, because of its small size and softness, but it is easily detected by the speculum. The cure is simple,—excision by scissors, or Dr. Braxton Hick's small wire écraseur, or torsion by Wilde's snare, and, subsequently, repeated cauterization.

Vaginitis—Medicinal Suppositories.

Dr. M. HELLER of Cincinnati, translates for the *Lancet and Observer*, March, 1868, the following by Dumarquay in the *Bulletin de Thérapeutique*, 1867, No. 6, p. 153 :

Vaginitis is an extremely troublesome affection, no matter from what cause it emanates, and, in general, is of a specific character, yet it may come on spontaneously or from leucorrhœa, which gives rise to symptoms greatly resembling gonorrhœa.

It is known that Dumarquay cures vaginitis in twelve to fourteen days, by means of a tampon dipped in glycerine, which holds tannic acid in solution (eight to ten grammes tannin to thirty-one grammes glycerine). This dressing can be kept three to four days. John Black, of Philadelphia, made, for the same purpose, medicinal suppositories, which, according to Marion Sims, gave very satisfactory results. After having tried different compositions, Black prefers the following formula :

R.—Butyr. Cacao, 16 grammes.
Morph. Sulph., 16 grammes.
Sulphas Ferri Liquid, gtt. 144.
Cerat., 14 grammes.
M.—Make into two suppositories.

One of these suppositories must be introduced every two days into the vagina, except during the period of menstruation. Black says that the average number of days necessary for the cure were put down as follows : For the sulphas ferri liquid, nine days ; for alum and tannin, nine and a half days ; for ol. cop. twelve days ; ungt. iod., thirteen days ; ungt. hyd. nit., fourteen days ; chlor. of zinc, nineteen days. The most energetic preparations are therefore subordinate to the milder ones.

Carbolised Sponge Tents.

ROBERT ELLIS, Esq., Surgeon to the Chelsea and Belgrave Dispensary, publishes in the London *Lancet*, some observations on sponge tents.

After adverting to the serious inconveniences and occasional danger incident to the use of the common sponge tents, the author proceeds to describe a new kind, introduced by himself, under the name of carbolized sponge tent. In this invention sponge is still retained as the dilating agent, but the tent is prepared by a peculiar process which renders it incapable of putrefaction, without diminishing its value as a dilator. This is accomplished by introducing into the core of the tent several threads of cotton wick steeped in carbolic acid ; and after the sponge is rolled into its proper shape, it is then immersed in cocoa butter to which a certain quantity of glacial carbolic acid is added. The disinfectant properties of this agent completely protect the tents, and they are withdrawn in an inodorous state even after a stay of twelve or eighteen hours in the cervical canal. The shape and size of these sponge tents also differ from the ordinary kind, which are both clumsy and dangerous, as well as disgusting in their use. These are spindle-shaped, and thus accurately adapt themselves to the fusiform character of the canal which they are intended to dilate. They require no support when *in situ*, but, by virtue of the immediate fusion of the enveloping material, they take to their work immediately, and are firmly kept in position. The author stated that he had a large experience of their utility and value.

Iodoform in Cancer of the Uterus.

The Paris correspondent of the *Medical and Surgical Reporter*, Feb. 8th, writes:

At the municipal *Maison de Santé*, in the service of M. Demarquay, some remarkable cases have been recently observed of the beneficial influence of iodoform upon cancer of the uterus. Without in any way hindering the march of the disease, this agent seems able to diminish the suffering to an extraordinary degree. The first case related is that of a patient who entered the *Maison* perfectly exhausted with hemorrhage and pain. A bosselated tumor occupied the uterine orifice. After a day or two of expectation, the physician introduced into the vagina a suppository composed of ten grammes of butter of cacao, and fifty centigrammes of iodoform. During four or five days, no benefit was derived from this treatment, but on the sixth, the suppository was pushed into a cavity of the tumor, and from that day the pain ceased, as by enchantment. Certain digestive troubles disappeared, the patient's appetite and sleep returned, and very soon she found herself so completely comfortable, that she had no doubt of her rapid recovery. The suppository was introduced every two days during three months, and the comfort of the patient was undisturbed to the last moment. After several days of extreme feebleness, in which the dying woman never ceased to bless the remedy which she believed had saved her life, death supervened, but disguised by the most complete euthanasia.

In another patient, of whom the observation is not yet complete, a similar remission of suffering was also obtained.

It is necessary that the inflammatory period of the disease should have ceased before the local application of iodoform be attempted.

Instead of a suppository, an emulsion of iodoform may be applied upon lint to the tumor. This emulsion may be prepared with one part tincture of iodoform and four parts glycerine.

The Local Treatment of Uterine Hemorrhages

In the non-pregnant state, is the subject of a paper in the *Deutsche Klinik* (1868, Nos. 1, 2), by Prof. F. WINCKEL, of Rostock. The author favors the direct application of hæmostatics to the uterine mucous surface, which he does not consider so dangerous a proceeding, as we are led to believe from the remarks of celebrated gynæcologists, such as West, Vert, and Scanzoni. Prof. Winckel has frequently resorted to styptic injections into the cavity of the uterus, and has never observed them to be followed by ill effects, although occasionally they fail. In his opinion, too much time is usually wasted in cases of severe menorrhagias by the application of astringents into the vagina, instead of their direct introduction into the uterus.

The styptics to which he generally resorts for injections are alum (gr. ij-v ad ʒj), tannic acid (gr. ij-v ad ʒv); pyroligneous acid and liq. ferri sesquichlor. neutr. to three parts of water, or undiluted. Care should be taken that the fluid has the proper temperature, and that the os uteri is sufficiently dilated to offer no great obstacle to the escape of the injected fluid; finally, the injection should be made slowly.

Another procedure of local medication of the uterine cavity consists in *tamponing the uterus with laminaria or gentiana*. This method of direct hæmostasis the

author first applied in 1865, by means of laminaria. Subsequently, he has resorted to sticks of gentian, which he prefers in some respects to laminaria. It can be obtained in thicker pieces, and if the bark is allowed to remain, does not slip as readily as the former. It is introduced, like the uterine sound, either in the form of a long bougie (about one foot), corresponding in thickness to the width of the uterine cavity, or in smaller sticks by means of a pincette. One or two applications may thus be made daily, according to the degree of the hemorrhage, increasing the size of the bougies successively until the hemorrhage is arrested. If this procedure fails, however, the advantage has been gained that the finger may readily be introduced into the cavity, its walls explored, and the injection of styptics be accomplished without difficulty.

Ovarial Hernia.

Dr. J. ENGLISCH, of Vienna, has a series of articles in the *Wiener Medizinische Presse*, in the April and May numbers of 1868, in which he gives several illustrative cases of ovarian hernia. As regards the diagnosis, he considers the appearance of signs of strangulation coincidently with menstruation as the most important point; and also as very important, the fact that cathartics or enemata will act. When there is no strangulation we may perhaps judge by the hardness of the tumor, which cannot be diminished by pressure; and which, when it is pressed into the abdomen, disappears without any gurgling noise. The uterus may also be sometimes felt to move when we push about the tumor, and reciprocally pressure made on the uterus will have an effect on the tumor outside.

Dr. ENGLISCH lays a great deal of stress on the analogy of this affection (which is usually congenital), with the descensus testiculi in man.

Menorrhagia treated by Intra-uterine Injections.

Dr. WILLIAM MASSIE, of Grandville, Edgar Co., Illinois, read a paper on Menorrhagia before the Esculapian Society of the Wabash Valley (*Western Journal of Medicine*, March, 1868), founded on a case that came under his observation. The patient, aged 27, was the mother of two children. After a suppression of the catamenia for two or three months, patient was attacked with a profuse sanguineous discharge, which had produced syncope before Dr. MASSIE's arrival. A vaginal examination did not confirm a suspicion of abortion, and the doctor was subsequently led to believe that she did not abort. Ergot, the cold douche, gallic acid, acetate of lead, opium, digitalis, quinia, and other remedies, were employed without avail, for the discharge continued, with scarcely any abatement, for nearly three months. The os uteri was sufficiently patent to admit the point of the index-finger to the first joint, and, with the speculum, blood could be seen issuing in a continuous stream from the os. It was now determined to inject the uterine cavity, which was done without difficulty. A gutta-percha catheter was introduced, and carried nearly three inches within the os, the wire withdrawn, and 24 grs. of nitrate of silver, dissolved in f3ij of water, was effectually thrown into the uterus. This was followed by dull, aching pain in the pelvic region, which continued about two hours. Full doses of opium, and cold vaginal injections every two hours, while the pain continued, were ordered. The effect of this treatment was all that could be desired, and the patient recovered entirely.

In this connection, Dr. Massie gives his estimate of internal remedies in hemorrhage. He says:

As an internal hemostatic ergot is the remedy *par excellence*, whatever organ the hemorrhage be from.

Oil of turpentine is certainly very useful, but is not to be relied on when prompt action is required.

Cannabis Indica has appeared to do good, but I have not had experience enough with it in hemorrhage to determine its real value.

Among the astringents proper, gallic acid, from the vegetable kingdom, has appeared to do most good; but it should be given in large doses (30 to 40 grs.), and frequently repeated (every half hour or hour), when prompt action is required.

Acetate of lead, from the mineral kingdom, has been most efficient, but the constipation and nausea that follow its use are serious objections to it.

I could not be induced to rely on any of the astringents, however combined, if the discharge was profuse or alarming, though they are useful adjuvants in such cases.

Digitalis is certainly a very powerful hemostatic, independent of its sedative action on the heart. In all cases of profuse hemorrhage, I am in the habit of giving it in combination with ergot. I believe its action is chiefly due to its property of exciting the vaso-motor nerves, thus producing contraction of the vessels from which the blood flows.

Much apparent discrepancy exists among writers as to whether digitalis is sedative or tonic to the heart. I think it is both, under favorable circumstances; that is, it both calms and gives energy to that organ, principally by its regulating the circulation in the coronary vessels.

I am disposed to explain its action on the brain in delirium tremens, and other cerebral disorders, in the same way. I am much in the habit of prescribing it in cerebral disorders, dependent on vascular disturbance, with the best results, especially in children. I have ceased to fear its cumulative effects.

I do not give it in cases in which the pulse is wiry or hard (*i. e.*, where the lancet is indicated), but if it is soft, feeble, and frequent, it may be used freely without fear, and with benefit.

I am not one of those who can see nothing but vaso-motor disturbance in disease, as is getting to be quite fashionable nowadays.

But I have no doubt but that vaso-motor paresis is often a very important link in the chain of morbid phenomena in many diseases which, when broken, renders the rest inoperative. I have seen it produce temporary blindness, probably by its action on the vaso-motor nerves of the arteria centralis retinae. However this may be, it is certainly very efficient in hemorrhage.

Dysmenorrhœa.

Dr. DAVID WOOSTER, of San Francisco, California, publishes in the *Pacific Medical and Surgical Journal*, May, 1868, some cases in which he resorted to bilateral incision of the cervix uteri for dysmenorrhœa.

1. M. A—, with obstinate uterine catarrh, and round orifice of os uteri, the size of a No. 8 bougie, and with great anteversion, so much that the bladder was constantly and severely irritated. After trying sponges and injections in vain, I resorted to bilateral section, performed after Sims's method, incising the os with a

partly concealed bistoury. The canal of the cervix was now so ample that a No. 12 catheter would pass without lateral resistance; through this the uterine cavity was washed out with tepid water, weak salt water, solutions of perchloride of iron, one drop to the ounce of tepid water, precisely as an abnormally secreting mucous membrane might be deterged in other situations, as that of the mouth, vagina, urethra, nares, etc. I thus had the satisfaction of doing three things well: *a*, making an os sufficiently large for easy menstruation and conception; *b*, relieving the engorgement of the uterus, and thus favoring its permanent replacement; *c*, curing an obstinate uterine catarrh, attended with the secretion of mucus so tenacious as to sustain two inches in length of its own substance, and with which the canal of the cervix was constantly plugged. This case was under treatment three months, and was entirely cured.

2. Precisely similar to case first, except that this is a widow, whereas the other was a married woman. This woman has added to her affliction an unconquerable desire to gratify a perverted passion by rubbing the glans clitoridis. At her earnest request, besides performing the bilateral section of the cervix, as in case first, I lifted up with a tenaculum and snipped out with curved scissors the offending organ, which completely cured her of her unnatural inclination. She recovered of her other troubles, except that she finds it necessary to wear an S pessary for the anteversion, when she has occasion to walk much.

3. Mrs. —, æt. 20, married since 17, childless, came under my care for uterine troubles, dysmenorrhœa, prolapsus, leucorrhœa, lumbar pains, etc. Orifice of os not larger than the blunt end of a pocket-case probe; dilated with sponges, and passed bougies, used styptic lotions, etc., in the most classic manner,—no result. Made bilateral incision of external os, and half an inch of the cervix, leaving it gaping. Dilated internal os with prepared sponge, and deterged uterine cavity three different times, two or three weeks apart. This case was treated, and discharged cured at the end of six weeks. She menstruated twice while under treatment, the second time without pain. After returning to her home in the country she was "regular" once, and then no more; she is now in the eighth month of pregnancy, and in excellent health. This case may be fairly classed among those in which the incision of the os renders conception possible, which before was impossible. This operation was not made according to Sims, nor through his duck-bill speculum; but through the ordinary glass speculum, with a curved tenotomy knife. The point of the knife was carried into the cervix a little more than half an inch, thrust through the cervical wall, and then drawn forward, the point against the speculum, until the section was completed; the same thing was repeated on the opposite side.

Concerning the loss of blood in these operations, I have never found it considerable enough to require more than the momentary application of some styptic.

Other cases are so nearly similar to these that details would be merely cumulative. I am satisfied that a uterine catarrh that can be cured in no other way now known to the profession, can be safely and certainly cured by the aid of incision of the cervix, either from the os externum, to the dilatation of the cervix, when the catarrh is limited to the cervical canal, and the external extremity is small and round, or quite through the internal os, when the catarrh affects the uterine cavity also. Of course incision is no substitute for, but an adjunct to, the usual detergent treatment.

Many cases of small and round os are caused by treating cervical denudation

or ulceration with nitrate of silver for a long time. Much of this might be avoided by treating such cases with tannic acid, dry, or with glycerine, or solution of perchloride of iron. These agents produce no narrowing of the cervical canal, or of its external orifice.

In a clinical lecture on dysmenorrhœa, delivered in the Commercial Hospital, Cincinnati (*Western Journal of Medicine*, January, 1868), Prof. M. B. WRIGHT strongly opposed the reasoning that leads to incisions into the neck of the uterus, in dysmenorrhœa, as illogical and fallacious, and the practice founded upon it as reprehensible. He arrives at the following conclusions upon the subject :

1. That, in his opinion, most cases of dysmenorrhœa are to be treated as neuralgic, and that more cases yield under the influence of quinine, given as an anti-periodic, than any other medicine.

2. The pain of menstruation is not always in the uterus. It may be in the ovaries, bladder, rectum, or some morbidly sensitive tissue in the pelvis.

3. Inflammation may exist, as well as congestion, requiring nothing more than the treatment usually employed for the relief of these conditions.

4. Membranous dysmenorrhœa may be more easily prevented than subdued. The application of leeches to the neck of the uterus, and the administration of quinine, in anticipation of the catamenial function, claim your careful consideration.

5. Closure or contraction of the cervical canal, to such a degree as to prevent a painless flow of the menses, are so rare, as to justify their exclusion from the causes of dysmenorrhœa.

6. Uterine tumors, pendulous or otherwise, belong strictly to the surgeon, and should not be associated with dysmenorrhœa. Besides, their presence is mostly attended by profuseness rather than scantiness of discharge.

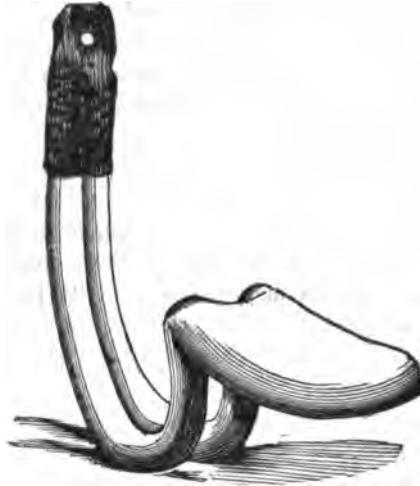
7. Too little attention has been paid to the irritability and contractility of the muscular fibres surrounding the uterine extremity of the cervical canal. Very often they act seemingly as a sphincter, resisting the passage of the uterine sound into the cavity of the uterus. A tendency to contraction is doubtless increased by menstrual excitement, and when spasmodic action occurs, pain is the consequence. The remedy most efficacious in those cases, is a combination of quinine with morphia, camphor, or some of the antispasmodics.

Prolapsus Uteri—A New Form of Pessary.

Dr. AUG. ERICH, of Baltimore, reported to the Baltimore Medical Association (*Medical and Surgical Reporter*, May 30, 1868), an aggravated case of prolapsus uteri of seventeen years' duration, which had gradually increased until the uterus was suspended between the thighs, and could only be kept within the vagina by artificial support. The condition of the patient was most deplorable. The uterus had been hanging between the thighs for months. The whole surface of the os was excoriated, and there were also excoriations on both sides of the tumor, caused by friction. Patient positively refusing to submit to an operation for the cure of the prolapsus, was placed on her knees, and the mass replaced in the pelvis, and sustained by a temporary bandage and the recumbent position, until a new support could be contrived and made. Dr. Erich says: The apparatus was applied on the following day, and after two or three slight alterations in its form, made during the first week after its application, became perfectly comfortable, and answered

the purpose entirely. She has now worn it nearly three months, and can walk or do any kind of work without the slightest hindrance. It does not interfere in the least with micturition or defecation. It consists of the same materials of which I construct pessaries for simple versions and flexions, specimens of which I have had the pleasure of exhibiting to this Association at a former meeting.

FIG. 14.

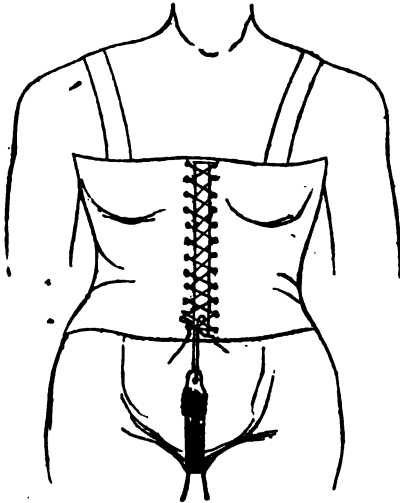


The pessary used in the case related, with the gum bag over pessary proper.

A piece of No. 12 tinned iron wire is bent to the proper shape, and a piece of vulcanized gum tubing, of half an inch external diameter, is slipped over it. I select so large a size of tubing in order to distribute the necessary pressure over a large surface. I slipped over the whole of the pessary proper a gum elastic bag. The anterior face of the pessary, as well as the descending portion of the stem, rest against the internal surface of the pubes, and the two branches are sufficiently separated to avoid undue pressure on the urethra. The ascending portion passes over the pubis, along the linea alba, and is supported by means of a cord fastened to the patient's corset, or any other part of her under-garments, offering an unyielding point of support. It is evident that this pessary cannot slip out of the vagina, or change its position materially, so long as its anterior face is lodged behind the pubes, and that the point to which it is fastened would have to yield fully two inches before it could descend far enough to pass out of the vagina. I am convinced, from my experience, that a corset with shoulder-straps, or any other part of a lady's under-garments suspended from the shoulders, furnishes a more secure and decidedly more comfortable point of support than a belt around the loins. As the whole surface of the instrument consists of gum tubing, it is not liable to be affected by moisture, nor will it become offensive in consequence of absorbing and retaining the secretions of the vagina. Although strong enough to resist any pressure to which it may be subjected *in situ*, still it can be moulded by the hands of the physician, without the aid of tools, to adapt it to the peculiarities of the case. It can be easily removed and replaced by the patient. It presents a surface almost as soft as flesh, which is quite important with aged ladies, who are generally the subjects of this malady."

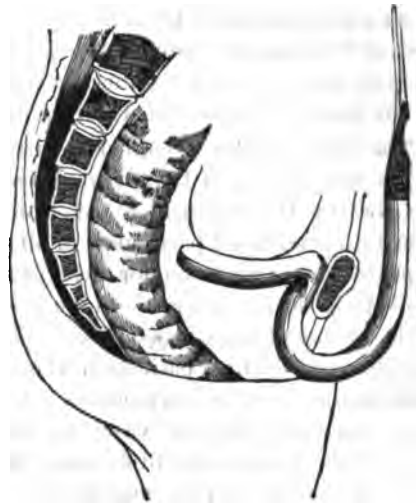
The lady with the pessary *in situ* was presented to this Association, and the members expressed themselves highly gratified with the result. The patient seemed

FIG. 15.



The ascending portion of the stem, and the mode of suspension.

FIG. 16.



In situ.

to prize her pessary very highly, and said that it did not produce the slightest uneasiness.

Puerperal Fever.

At a meeting of the St. Louis (Missouri) Medical Society, February, 1868, reported in the *Humboldt Medical Archives* of that city, a discussion was held on the recent epidemic of puerperal fever in that city. Dr. L. CH. BOISLINIERE remarked: I tried the hyposulphite of soda, perhaps too sparingly. At the Lying-in Hospital it was tried, but without success, perhaps on account of the smallness of the doses. The house had to be closed three months on account of the mortality. In case of the reappearance of the disease, instead of the hyposulphite of soda, tried last year, I would try the sulphite of magnesia in thirty to forty grain doses, every two or three hours. Polli prefers it as a curative, and the hyposulphites as prophylactics of zymotic diseases. Several cures by these remedies have been lately reported in England. At the same time a sustaining and stimulating course should be adopted. Lately I had a case which recovered under the administration of large doses of the sulphite of magnesia, thirty grains every two hours, bark, and a quart of brandy in the twenty-four hours. This had to be kept up generally until the pulse fell from 145 to its normal rhythm.

Another plan is to give one or two grains of opium with five grains of calomel every two hours until pain is relieved, and the patient's gums touched. Dr. Papin has assured me that every patient has recovered where the constitutional effect of the mercury could be produced; in his hands, salivation was salvation. But this result could not always be produced, and he lost some patients.

In most epidemic seasons, and where there was marked peritonitis, with a full pulse, I have followed his plan with success, except that I gave more opium and

less calomel, and in very obstinate cases I have occasionally applied a large blister on the abdomen, which I dress with mercurial ointment, rubbing the inside of the thighs with the same. This is Velpeau's plan, and I have seen bad cases of puerperal peritonitis recover under it.

As a prophylactic I have, in times of epidemic, used, I believe successfully, the plan of Dr. Bean, who administered, immediately after delivery, 20 grains of quinine to every patient, and 10 grains the day after; he quotes statistics entirely in favor of the plan, which was tried during an epidemic.

The same subject occupied the attention of the Obstetrical Society of London at its meeting April 1, 1868, reported in the *British Medical Journal*, April 18. Dr. GRAILY HEWITT read a paper on the fever in the British Lying-in Hospital. The author adduced particulars of all the cases of puerperal disease in which there appeared to him reason for designating the case as puerperal fever or closely allied to it, during a period of nine months, including three periods of three months each. Some of these attacks were slight, some more severe. Particular attention was directed to three patients in the same ward, attacked on December 28th, 1864, with almost identical symptoms. A fourth in the same ward had severe sweatings. In three of these cases the attack gave way rapidly to treatment. The fourth was dangerously ill for many days, but ultimately recovered. In all there were, during these nine months, 23 cases in which, in the author's opinion, the illness could only be regarded as of the nature of puerperal fever. The identity of the symptoms in the slight and in the grave cases was the basis of this conclusion. For the most part, as initial symptoms, were noticed, pain and tenderness in the uterine region, quick pulse, prostration of vital power, in almost all cases rigor generally well marked; subsequently, if the attack did not give way, abdominal swelling, great prostration, hurried respiration, threatening of death. Herpes labialis occurred in several cases. One only of the 23 cases died; this patient was admitted previously to the setting in of labor, for great prostration from chest-disease. She died of exhaustion two days after labor; the contents of the uterus being in a putrescent state. As to the nature of puerperal fever, the opinion was expressed that it is a form of pyæmia, the result of the introduction of a poisonous material into the circulation, the point of entrance being generally the inner surface of the uterus, or the vaginal surface. The poison may be introduced from without, or be the result of changes occurring within the uterus itself. Enlargement of the uterus had been noticed in many cases of the disease. On the question of the treatment of the disease, Dr. Graily Hewitt stated that the plan pursued by him was to enforce great cleanliness, and to give a liberal diet from the first in all cases as preventive measures; and, when labor was at all protracted, brandy was given during as well as after the labor. Beef-tea, eggs, and milk were allowed at once, meat on the second day. When any symptom of a suspicious character appeared, the case was at once treated as one of puerperal fever, as follows. The binder was directed to be closely and accurately applied, to prevent collection of lochia in the uterus and to facilitate its contraction; hot turpentine stupes were applied to the abdomen to relieve the pain, for which purpose the tight binder also gave universally good results. Every four hours the patient had 30 minims each of tincture of lavender, chloric ether, aromatic spirit of ammonia, and compound tincture of camphor. Brandy, with water or egg, was given at once in varying quantities; in a mild case six or eight ounces per diem; but as much as two ounces every two hours were given when initial symptoms were

very severe. Nourishment was given in good quantities, very frequently chiefly liquid; milk and eggs and beef-tea being most relied on. Something was given every half hour in the worst cases. Aperient medicines were carefully avoided, unless the rectum were obviously loaded. Experience had convinced the author of the bad effects of brisk purgatives in such cases. Later on, the same treatment was, if necessary, continued, with the addition of 20 to 30 minim doses of tincture of iron in some cases, and in some of turpentine enemata. Promptly thus treated, the disease had almost invariably given way. Since the year 1862, the author had treated the disease boldly and thoroughly on the stimulant plan, having first observed its extraordinary effect in a woman, who, being extremely ill, took every day for over a week at the rate of a bottle of brandy, besides nourishment in good quantities, and recovered. Some also of the cases now related were very bad ones. If the disease be allowed to go on unchecked for two or three days, this stimulant plan may fail, the important point being to treat the affection promptly. Intra-uterine antiseptic injections the author thought highly of, but they were not employed in these cases. Lastly, the conclusion drawn as to the question of the propriety of lying-in hospitals was, that they can only be safe when patients are isolated absolutely from each other, where, in fact, the conditions approximate to those present in home attendance.

III. DISEASES OF CHILDREN.

Infantile Convulsions.

In a communication to the *Medical Press and Circular*, April 15th, 1868, Dr. P. C. LITTLE of Dublin, Ireland, after giving the details of seven cases of infantile convulsions, sums up as follows:

The obstacles to a correct diagnosis in this class of diseases are many and peculiar. Amongst the latter is commonly, inability of the patient to make known his ills. His frail organism, ever changing, developing, susceptible of disturbance from slight causes, yet so wonderfully recuperative, also increases our difficulties, and shows the necessity of careful examination of the sensible phenomena of the case, and of precise knowledge of the antecedents of the little sufferer. In him trifling violations of nature's laws are visited with severe penalties. While, on the other hand, our efforts to restore his health are in general amply rewarded. Guided by these views in my investigations, I was led to conclude that the prime pathological origin of the convulsions in each of the foregoing cases was as follows:

Case 1.—Irritation of digestive organs, caused by improper food.

Cases 2, 3, 4.—Dentition, and absence of proper counter-irritation, *e. g.*, of bowels.

Case 5.—Fever, which preceded and attended the paroxysms.

Case 6.—Tuberculosis. The hydrocephalic evidences were, bulging of fontanelles, dilated pupils, convulsions, history, etc.

Case 7.—Cerebro-meningeal derangement in left hemisphere, probably near medulla oblongata. The violent action of right arm, and the history decided my diagnosis.

One of the most ordinary causes of disease in infancy is unsuitable nourishment,

which often creates derangement of bowels and convulsions. Case 1 is an example of this, and of the restorative power of a mother's milk. In the absence of the latter, I have in many instances found that, two-thirds of fresh cow's milk, one-third of boiling water and a little sugar, combined, make an excellent substitute for at least the first three or four months, after which the infant tires of it, unless a little arrowroot, corn-flour, biscuit-powder, or the like be added. Human milk, unlike that of herbivorous animals, is produced from such a variety of *ingesta* that it seems peculiarly adapted to the demands of the infant economy, with which it always agrees; and experience testifies to its capacity of alone supporting mature life, and supplying all its wants. If the child suffer from flatulence, irritation of bowels, and diarrhoea, or be of low vitality, from five to ten drops of brandy may be added to each bottle of food, with great advantage. I have so frequently observed the efficacy of this simple adjunct, under such circumstances, that I rely upon it to the exclusion of oil of anise, syrup of poppies, "soothing syrup," or other *nostrums*, in high repute with "baby-farmers" and indolent nurses, but which too often purchase a temporary quiet at the cost of the general health, and sometimes of life itself.

The widespread, but happily declining, prejudice against bottle-feeding, rests chiefly upon examples in which there was negligence, or ignorance as to the details of that method of nursing. What wonder that bad consequences should follow the use of sour, reboiled, or adulterated milk, unclean bottles, impervious or worn-out mouth-pieces and tubes! I have again and again traced the failure of this system of feeding to some of those sources, and as often have I been gratified with the success resulting from attention to the following directions:

1. Make only as much food as may be required for present use.
2. Let the milk be pure, fresh, and unboiled.
3. Add to it one-third of boiling water on going to feed.
4. Add also a little sugar, brown or white, according to the state of the bowels.

The bottle and its fittings should be always perfectly clean. This may be more easily secured by having two bottles, one of which, on being used, should be immediately rinsed with warm water, and kept in a basin of cold water until again required.

Dentition is a fruitful originator of convulsions, as exemplified in Cases 2, 3, 4. And here I must record, as the sum of my experience, a humble protest against the too prevalent, indiscriminate, and, I had almost said inhuman, practice of scarifying the gums during this natural process. It may be noticed that, in Case 2, that proceeding did not relieve, but intensified and multiplied the fits. I have invariably observed that, in children otherwise healthy, the excitement of teething and its occasional consequence, convulsions, may be controlled and finally subdued, by keeping the bowels rather free, on the principle of counter-irritation and derivation, I presume. Whether such be the explanation or not, it seems consistent with natural laws, and with our physiological knowledge, that, as far as possible, local interference with such developments as teething ought to be avoided; and that we should try to modify any unusual excitement during that function by constitutional means, after the manner in which our venerable instructor nature, is wont to assuage such ills. Thus, during dentition, we observe her counteractions upon cutaneous surfaces, causing white or red gum-rash, *crusta lactea*, etc.; or upon mucous membranes, as of the alimentary canal, the bronchi, or nares, producing diarrhoea, bronchitis, or a semblance of coryza. Such may be called

the safety-valves of dental irritation. This appears to me to be a point of the greatest importance in connection with the management of dentition, and I would respectfully solicit observant practitioners to scrutinize it more thoroughly in the light of natural and morbid physiology, and with the view of reforming the old sanguinary treatment.

The occurrence of convulsions in the course of infantile fever is unfrequent, and in my opinion is not always a mere sympathetic expression. I should rather say, it is more commonly a development, at a nervous centre, of the morbid influence which imbues the whole economy. And as such, in Case 5, my treatment was specially directed to the removal of the nervous lesions, since I could not cut short the fever. The early announcement of the typhoid character of the latter was valuable, as indicating the means to be employed, and in particular the necessity of timely stimulation, for the remedying of the cerebral complications.

As a preparation for special treatment in infantile convulsions, I have generally prescribed a mercurial aperient, and castor oil after it. In some cases, this course, repeated occasionally, has been all that was required. I have always been pleased with the effects of counter-irritation, especially by sinapism. Alteratives, such as gray powder, or James's powder, have appeared to me requisite where hepatic or gastro-enteric derangement was manifested, by the character of the stools, the skin, the rigid and sensitive state of the abdomen, and, not least of all, the history of the patient, as in Case 1.

My reasons for giving such large doses, particularly of mercury, in those diseases were—1st. I made allowance for waste in administration. 2d. Experience taught me that, in such cases, especially in teething, means unusually powerful are necessary to divert the irritation to the bowels. 3d. As regards mercury, it seems to me to act, in the infant system, more as an aperient, gentle stimulant, and alterative, than as a sialagogue. I consider it to be specifically indicated in diseases of local irritation, by increasing generally the action of the absorbents, without salivation, or the other depressing effects which it produces upon adult life. Possibly, the undeveloped organic state of the infant insures for it immunity from the objectionable effects of this medicine, in the same way in which that tender period is exempted from many of the ills which afflict more mature years.

Dr. HAMMOND, of New York, in a lecture delivered at the Bellevue Hospital Medical College, on this subject (reported in the *New York Medical Gazette*, December 7th, 1867), makes the following instructive remarks on the prognosis and treatment of infantile convulsions:

"The prognosis in infantile convulsions must be guarded, but generally speaking, the simple, uncomplicated irritative convulsions are not dangerous. There is more to be feared from the tonic stage of the fit, than from the clonic, or the stupor that supervenes. The reason for this is very obvious. During its continuance, the respiratory process is arrested, and if it lasts as long as a minute and a half, as it occasionally does, death necessarily follows from asphyxia or syncope. What are called inward convulsions, and which consist almost entirely of tonic spasms of the diaphragm and other respiratory muscles, are much more liable to terminate unfavorably than those which are more prominently marked, and which are succeeded by clonic convulsions.

"Relative to the treatment of infantile convulsions, I have a few points to mention, which, I think, are of importance. During the paroxysm, in ordinary

cases, there is not much to do; generally, a great deal is done, and with more or less injury to the patient. The application of mustard plasters, or hot water, and such like revulsives to the extremities and pit of the stomach, can do no good; on the contrary, they may do much harm by increasing irritation. Purgatives, injections, emetics, etc., at this stage of the disease, are also inadmissible, and I have never seen any benefit derived from either warm or cold baths. The tendency of the convulsion is to exhaust itself, and this it usually does in a short time. Therefore, give nature a chance, and let the patient alone. Do not, during the seizure, be officiously treating the cause. When the equilibrium is restored is the time to remove this by an emetic, a cathartic, a vermifuge, an incision, or any other medicine or operation which will strike at the source of irritation. Should, however, the paroxysm continue longer than the ordinary period, or should the tonic stage be severe and prolonged, or should the fits recur frequently, and should the symptoms indicate hyperæmia of the brain, press your fingers gently on the carotid arteries, as advised by Rilliet and Barthez, so as to obstruct the flow of blood to the cranium. This measure will generally be successful in breaking up the fit, and you can resort to it as often as may be necessary. You will thus have opportunity to employ more permanent means, and to remove the cause of irritation. You may also very safely and certainly cut short or prevent a paroxysm by the use of chloroform inhalations, as recommended by Trousseau. Take a linen handkerchief, pour a drachm of chloroform upon it, and hold it close to the mouth of the patient, in such a manner as not to obstruct the free entrance of atmospheric air to the lungs. Do this for a few seconds, and then remove it. Again apply the handkerchief, and continue this see-saw motion till an impression is produced, or till you have reason to believe that the remedy will not succeed. I have treated a number of cases by this means, and always with success in uncomplicated attacks.

"In the 'inward fits,' or in cases where the paroxysms recur rapidly and frequently, you will derive much benefit from the bromide of potassium, given in from three to five grain doses, repeated every hour or two. This medicine diminishes the amount of blood in the cerebral vessels, and is therefore not applicable to anæmic cases. It is also a very decided sedative to the nervous system. For these latter, stimulants, tonics, and a position of the body favoring the flow of blood to the brain, should be employed. In one very severe case, where there was very decided anæmia, I made use of hypodermic injections of morphia. The child was six years old, and I injected the twentieth of a grain of morphia, at intervals of two hours, with very excellent results. The practice is one which should be followed cautiously, and not at all in very young children, or in slight cases.

"The subsequent treatment is exceedingly simple. If you can discover the cause of irritation, remove it. Often you are justified in experimental attempts to find it by using emetics, vermifuges, purgatives, or other means which your observation and suspicions may justify you in employing. Hygienic measures should not be neglected. Fresh air, good diet, regular exercise, and the avoidance of undue mental or physical excitement, will materially aid in preventing returns of the attacks. You cannot be too assiduous in using these measures, and no drugs with which I am acquainted can take their place."

Idiopathic Muscular Paralysis of Children.

In the *Journal für Kinderkrankheiten*, for March and April, 1868, there are reported some remarks by Professor BOUCHUT, made at the clinique of the Children's Hospital, of Paris, on what is named by him Idiopathic Muscular Paralysis, or Paralysis Myogenica, and by Duchenne, Fatty Paralysis, or Fatty Muscular Atrophy of Children.

Bouchut considers that the disease originates in the muscle itself, and is essentially an affection of the development force of the muscle, with no accompanying disease of either the brain or spinal cord. The paralysis comes on suddenly, and without convulsions, and is followed by atrophy and fatty degeneration of the muscular fibres themselves. He thinks that he has found an analogous affection to this in the paraplegia which sometimes attacks horses which have been overworked. With them also recovery seldom takes place, and two or three days after the attack, the diseased muscles will be found to have a yellowish appearance, and to be infiltrated with fat, presenting a marked contrast to the healthy muscles. There will be found no disease of the nervous system.

Dr. Bouchut thinks that if in such a case as this, the animal were to live long enough, it would be found, as in the disease of children, that atrophy would take place.

The diagnosis of this species of paralysis is aided at the beginning by the absence of all ophthalmoscopic changes, and after it has existed for some time it can be diagnosed with certainty by the use of Kies's trocar; taking out a small piece of the muscle, and examining it under the microscope, when it will be found infiltrated with fat, and deprived of the normal transverse markings. In no stage of the disease are the powers of sensation diminished. The prognosis is rather unfavorable, for although usually some of the muscles at first affected recover, yet others almost always go on to complete atrophy and permanent paralysis.

Infantile Paralysis.

In a clinical lecture, at the Jefferson Medical College (*Medical and Surgical Reporter*, January 18th, 1868), Professor GROSS, presented the case of George K., set. two years. This case is one of interest, presenting an example of an affection of the inferior extremity, very frequently met with. He cannot walk any at all now, and has not done so for thirteen weeks. He has the use of the right, but none of the left leg, which stands out in an unseemly manner, with the foot inverted as in club-foot. The leg is wasted, as is also the thigh; the muscles are exceedingly soft and flabby; and the surface is colder than it is in the natural state or in the opposite limb. There is a want of circulation, a want of nerve-power, in other words, some of the muscles of the limb are paralyzed, especially the extensor, and there is a tendency to the formation of club-foot. If the case be not relieved in a comparatively short space of time, there will be such an amount of contraction on the part of the tendo-Achillis, as to give rise to equino-varus.

This is that form of paralysis which so frequently happens in this and other countries during the progress of dentition. The child seems to be well, eats a hearty supper, goes to bed, and wakes up at two or three o'clock, suffering from excessive restlessness and great thirst; in the morning when an attempt is made to place him on his feet he is found to be paralyzed. Either both limbs suffer or frequently, as in this case, one. This constitutes infantile paralysis, produced

evidently by disease of the spinal cord or of the nerves which emanate from it to supply the extremities. The upper extremities are sometimes involved, but this is uncommon, the disease being generally observed only in the lower.

It is supposed that the pathology of this affection consists in a lesion, inflammation, with deposit, of the spinal cord, or of its thecæ. In this way pressure is made upon the nerves which supply the inferior extremities, so as to interfere with the passage of nerve-fluid. It is not owing to any disease of the brain; the lesion must be in the spinal cord, or in its arachnoid prolongation. The probability is that it is an inflammation, followed by effusion of plasma, which becomes organized and presses the nerve so as to impair its function.

The child was ordered five drops of the tincture of the chloride of iron three times a day, a nutritious diet, and a dessert-spoonful of good whiskey or brandy, along with one-half a tumbler of milk three or four times in the twenty-four hours. As respects the part, frictions were ordered. The hot and cold douche was directed, the surface to be wiped dry and then rubbed with veratria ointment, or with a liniment or lotion containing veratria, at the same time shampooing the limb, kneading and pressing the muscles. Another excellent stimulant is flagellation with willow switches. It is one of the most powerful excitants of the muscles and nervous system in the treatment of disease, of which Professor Gross has any knowledge—more powerful and permanent than electricity.

Diphtheria—Its Treatment with Chlorine.

Dr. S. F. POMEROY (Boston *Medical and Surgical Journal*, April 30th, 1868), says:

The patient, a child, was taken suddenly ill at school, fainted, and was carried home. In six hours, had inflammation of the throat, very fetid breath, a glazed tongue, the fauces presented a mahogany color, and the diphtheritic exudation was well marked. Every four hours I ordered the use of a tablespoonful, properly diluted and sweetened, of the compound recommended in No. 39 of Braithwaite: R. Potassæ chloratis, ℥viij; acidi hydrochlorici, ℥iv; aquæ, Oij. Pulverize the chlorate of potash, and pour on the acid. As soon as the powder turns of a yellowish color, and the chlorine gas begins to escape freely, pour in the water. The improvement was very soon perceptible. I also used, as a local application, a solution of the persulphate of iron, applied with a swab to the throat. The diet was mainly milk and water, drunk freely.

The result of the treatment was much more satisfactory than that experienced under any other I ever used. No paralysis followed, and the recovery was complete. In one week after, the mother of the child was taken sick with the same disease, which was quickly removed by the same treatment.

While located in Stafford, Conn., I treated fifty cases during one of the most fatal epidemics of the disease that ever prevailed in this part of the country. The mortality was nearly fifty per cent. Some died in ten hours from the time of attack. All the cases occurred within a circle of half a mile, and no medical treatment seemed to have much control over the disease. Chlorate of potash (internally and locally), quinine and brandy, astringent gargles, nitrate of silver, persulphate of iron, sulphate of zinc, all were used, but the same result followed,—the disease ran its course. The application of ice to the throat on the outside, and its use internally with milk for nourishment, was, on the whole, most successful in this epidemic. I

made six autopsies; the blood I noticed was dark, and had no coagulum. I have recently used the chlorine and milk treatment, I think with better results than any other. I regard the disease as constitutional, caused by a poison of a peculiar character. The danger lies in a tendency to paralysis of the muscles of respiration, from the effect of the poison on the medulla oblongata. The muscles of deglutition are also peculiarly affected. I have known patients to walk across the room, and in a few minutes expire. I think narcotics contraindicated, and that they often hasten a fatal termination.

Scarlet Fever.

Dr. WAYNE GRISWOLD, of Circleville, Ohio (*Western Journal of Medicine*, January, 1868), strongly recommends the use of quinine, iron, and chlorate of potash, in the treatment of scarlet fever. He argues as follows:

Quinine acts directly upon the nerve-centres, creating nerve-force; it acts promptly, not only upon the nerves of volition and sensation, but with peculiar force upon the nerves of organic life; hence its peculiar adaptation in scarlatina, as well as many other diseases, to overcome the great nervous prostration. Quinine not only increases the nerve forces, but it thereby aids in revitalizing the blood, and checking that rapid waste and depravity which soon sink a patient in scarlatina. Iron, as well as chlorate of potash, acts directly upon the blood; it has a peculiar affinity for mucous membranes; a small quantity will diffuse itself throughout the entire alimentary canal, not only producing a fine effect upon the local lesion, but coming in contact with an extensive absorbing surface, passing rapidly into the lymphatic and bloodvessels, checking the blood depravity and the formation of white corpuscles. "Iron is food for the blood."

These facts have led me not only to the treatment of scarlatina with iron, quinine, and chlorate of potash, for the last seven years, but diphtheria, erysipelas, and typhoid fever, with almost universal success. When I found that I could reduce the rapid pulse in active scarlatina with iron and quinine, given in the earliest and highest stage of febrile excitement, I felt like exclaiming, Eureka!

According to Dr. Dyes (*Deutsche Klinik*), the course of scarlatina depends entirely upon the intensity of the inflammation of the throat accompanying the exanthema, and which being identical with diphtheritis, requires the same treatment as does the latter. He recommends chlorine water as the only effectual means to the end desired, and claims to have had abundant opportunity of convincing himself thereof in one hundred and sixty-three successful cases of diphtheritis, and five of scarlatina, in all of which the remedy was employed within the first five days of the disease. When gangrene had commenced, which is usually on the sixth or seventh day, the results were less favorable. The use of gargles of borax, alum, etc., is pronounced utterly valueless, as also the administration of chlorate of potassa, which, moreover, is always given in far too small doses. The author gives children under three years old the chlorine water diluted with one-third its bulk of water, to those between three and seven years old, with one part in four of water, and above the age of seven, unadulterated. The frequency of its administration depends on the stage and severity of the disease. During the first three days of the disease, he gives a teaspoonful three or four times a day; afterward, according to circumstances,—every two hours, or every hour. It is necessary to guard against the decomposition of the chlorine water. To this end it is essential that the dose

be swallowed rapidly, as its efficacy is otherwise decidedly lessened; and also, that no other drink be permitted for some little time after. The author bases the efficacy of this method on the antiseptic and anti-miasmatic qualities of the chlorine, whereby the spores of a peculiar species of plant from which the diphtheria is developed, are destroyed. He also recommends the taking of small doses of chlorine water daily, as a prophylactic, by those exposed to the infection of scarlatina.

***Chronic Diarrhœa in a Child One Year Old treated with
Liquor Ferri Persulphatis.***

Dr. GEORGE C. McMILLER, Assistant Surgeon U. S. A., communicates the following case to the *Leavenworth Medical Herald*:

A. B., a colored male child, æt. one year, son of one of the laundresses of Co. B., 10th U. S. Cavalry, was brought to me for medical treatment in the early part of August, 1867, while I was on duty at Camp Hoffman, near White Rock Creek, Kansas. A glance showed that it was in a condition of general atrophy. It presented the appearance of a little skeleton, clothed with integument. Its mother informed me that it had been small and puny almost since the date of its birth. The case wore the twofold aspect of a lack of development, and a positive emaciation. I ascertained that a chronic diarrhœa lay at the foundation of the trouble. Its mother stated that it had had about five or six passages every day almost since its birth. The stools were small, thin, feculent, and not attended with much pain. The abdomen was somewhat tumefied. The child's food had consisted chiefly of its mother's milk with potatoes. The cause of the diarrhœa I could not clearly make out. Altogether the case seemed to be hopeless, and I felt but little encouraged to commence any plan of treatment.

I directed the mother to feed the child on animal broths, soups, and farinaceous diet, as cow's milk could not be obtained, and I suspected that her breast-milk disagreed with the child, particularly as I had learned that she was a passionate woman. I likewise ordered one drop of the liq. ferri persulph. to be given three times a day in a teaspoonful of water. As already remarked, I was not sanguine as to the result of the treatment. I was surprised to find, however, in a couple of weeks, that the child was in every way much better, and at the end of two months it looked like a new being. The number of defections was reduced to one and sometimes two per diem, and it had gained strikingly in bulk and strength.

Phosphate of Soda in Bowel Complaints of Children.

Phosphate of soda, in small doses, is considered by Dr. W. STEPHENSON (*Edinburgh Med. Jour.*), a very important remedy for bowel complaints in children, induced by a lack of the requisite variety of food. The cases in which he recommends it are chiefly the following: In infants who are being artificially reared, and who are liable to frequent derangement of the bowels; also where the phosphatic elements in the food seem deficient, or where articles of food rich in phosphates, such as oatmeal, disagree; where, from the character of the motions, there is a deficient or defective secretion of bile. It is thus of service in cases of chalky stools or white fluid motions. The dose for children is from four to ten grains in the food, and for adults twenty to forty grains dissolved in water, after meals. In adults he had found that it effectually removed constipation when taken in drachm doses in the morning, and had seen benefit derived from its use in those cases where there was a feeling of fulness and pain in the epigastrium some hours after taking food.

Diagnosis of Ophthalmia Neonatorum.

Dr. A. D. WILLIAMS, of Cincinnati, Ohio, furnishes to the *Lancet and Observer* some abstracts of the proceedings of the Ophthalmological Congress, held in Paris, in August, 1867, from which we select the following:

Easy as it is, it seems that physicians do not always recognize this disease. It is safe to call every *free purulent* discharge from the eyes of an infant of from three to five days old, ophthalmia neonatorum, and treat it as such. Other diseases accompanied with such a discharge are so rare, at such an early age, that we might say they do not exist at all. Correctly diagnosing such trouble in infants, and making a prognosis accordingly, would save physicians many a severe censure from parents. Only a few days since, a child five weeks old was brought to the office, suffering from this disease, and had been since the fourth or fifth day. The attending physician told the mother, all the time, that it was only *cold*, and that there was no danger, it would soon pass off, and the child would be well. Upon examination, one of the child's eyes was found to be ulcerated, and will be seriously injured, if not completely lost. This ophthalmia of children is a very dangerous disease, and should always be looked upon as such, and the parents should know it at an early hour. Other instances of the same kind frequently come under observation, and we refer to the matter here only to put medical men on their guard, that they may avoid such unpleasant things. Heaven knows that doctors get censures enough for things they cannot help, and it is their own fault if they do not escape all they can.

Alimentation in Diseases of Children.

In some remarks before the New York County Medical Society (New York *Medical Record*, March 2d), Dr. A. JACOBI, spoke as follows:

"The evils of inanition receive marked illustration in practice among children. With them, even more than with adults, it is essential to maintain full nutrition; for in them metamorphosis of tissue is more rapid. They succumb more readily to acute diseases; and as these have generally a definite course to run, it is all-important to sustain the powers of life until the limit of the disease is reached, and the return to health may begin; else the patient may die just as you think the disease cured. If to the exhaustion of disease we add that of innutrition, relapses will be much more liable to occur. In pneumonia, for example, where the blood loses a part of its salts, and becomes more watery, if the deficient elements be not supplied, new effusions will be apt to take place on the slightest occasion, due less to violence of inflammatory action than to poverty of the blood, and the relaxed condition of its vessels.

"As an instance of the chronic starvation of special tissues might be mentioned rachitis, a disease exhibiting defective nutrition of the osseous and muscular systems. The proportion of phosphate and carbonate of lime (chiefly phosphate) in the bones of infants, is 60 to 63 per cent.; while in rachitic children, and particularly in cases of rachitic softening of the cranial bones, it falls as low as 50 and even 20 per cent. The lack of these elements is most probably due to excessive elimination; we cannot stop this, and must meet it by an increased supply. Experience has shown that a diet rich in phosphates will often, without medicine, effect a marked improvement. One theory of rachitis attributes it to an excess of lactic acid in the system; and the lactate of lime has been found in the bones.

This would lead us to avoid a diet of pure cow's milk, and to mix it with the farinacea, which render it more digestible and furnish a larger proportion of phosphates. Mother's milk contains more of these than cow's milk, and, if normal, will not produce rickets.

"Most of the summer complaints of children are caused by improper food, though the paralysis of the intestine, from heat, has also its effect. The gastric juice is often unduly acid; so that if milk be taken pure, or mixed only with water, it at once forms a curd so hard as to be indigestible, and must be rejected either by vomiting or by diarrhœa. Alkaline treatment has no permanent effect. We must address ourselves to the child's diet. Never give a drop of milk pure, or simply diluted. Always combine with it some farinaceous food, such as barley-water, or farina-water, and a little salt. The curds will then be loose and digestible.

"In acute gastro-intestinal catarrh it is frequently necessary to withhold food, and even water for many hours. Where everything is rejected, alimentation becomes no alimentation. The irritated mucous membrane must be allowed absolute rest. In one severe case Dr. Jacobi had not suffered even a drop of water to be given for twenty-four hours, and the infant looked rounder at the end of that time than before."

Protection of Infancy.

Dr. ULLERSPERGER, of Munich, has an article on this subject in the *Journal für Kinderkrankheiten*, for March and April, 1868, in which he particularly refers to the society which has recently been formed in Paris, to guard infants against improper diet and neglect, in the first year, more especially, of their existence. This society is called *La Société Protectrice de l'Enfance*, and was founded in 1865.

One of the plans suggested by it is to erect what are called "Mother-colonies;" that is, villages in healthy portions of the country, where houses, etc., will be furnished to such families as are willing to take charge of a certain number of young children; but, of course, the practical question here is whether a sufficient number of nursing mothers could be found to fulfil the requirements. The idea was to have in each of these colonies, houses for a director, a physician, and for the necessary offices. The houses for the nurses were to be made to accommodate their husbands also; and to be furnished with the necessary linen, etc., each house to have a kitchen-garden, and a stall for one or two cows.

According to a report made by Dr. Bertillon, there are now sent out of Paris into the country to be nursed sixteen thousand newly born children every year; three thousand of whom are sent out as cheaply as possible. Of these three thousand, half die in the first year, and of the remaining thirteen thousand, who are better cared for, nearly one-third die in the same period.

In Bavaria matters are even worse, if we may judge from a report made by Dr. Jügel, a district physician there. In his district, in the past six years, more than half of the children born have died in less than twelve months,* and he says that mothers never or hardly ever suckle their own children; and this, too, even in the lower classes. In England, if we may judge from the *Lancet* of December 21st, 1867, there is also great neglect of young children, and measures have been taken to guard against the abuse of intrusting infants to careless or wicked nurses.

* See the *Ärztliches Intelligenzblatt von Bayern*, No. 32, vom 6 August, 1867, 4 s., 473.

SURGERY.

I. GENERAL SURGERY.

Illustration of the Antiseptic Principle of Treatment in Surgery.

To Mr. LISTER, of Glasgow, is due the credit, whatever that may be, of having conceived the idea of employing carbolic acid, with a view to exclude the noxious elements of the atmosphere from recent wounds and suppurating surfaces. This practice has become the fashion of the day; and it is very extensively employed by the surgeons of Great Britain, and is, to some extent, being tested on this side of the Atlantic. The preparations of Mr. Lister, which have been very generally adopted, may be denominated carbolic oil, carbolic lotion, and carbolic paste. The composition of the first is one part of the acid to five of boiled linseed or other fixed oil; that of the second, carbolic acid and water, in the proportion of one to thirty; and that of the third, carbolic acid and whitening or prepared chalk, in the proportions requisite for the consistence of soft putty.

In a communication to the *British Medical Journal*, January 4th, 1868, p. 1, Professor JAMES SYME, of Edinburgh, narrates eight cases, which includes one of removal of a parotid tumor, one of wound of the knee-joint, two of compound fracture, one of psoas abscess, one of chronic abscess of the mamma, and one of acute abscess of the arm, which illustrate the satisfactory results to be derived from the employment of carbolic acid. From these cases we make the following selections:

Wound of the Knee-joint.—A man, aged fifty-three, fell upon his scythe, which inflicted a wound of the right knee, of about four inches in length, dividing the quadriceps extensor tendon, and affording free access to the joint. Carbolic oil was freely applied by sponging the cavity; the cut edges, which had been widely separated, were brought together by sutures; a pledget of carbolic oil was placed over the wound; and a splint was applied to keep the limb straight. Not the slightest constitutional or local disturbance followed, the pulse never being beyond sixty-three; and on the fourth day, the wound being quite healed, the stitches were removed. In one month the patient left the hospital with the limb strong and flexible.

Compound Fracture.—A boy, aged five, was admitted with his leg so seriously injured by having been caught between the spokes of a cart-wheel, that it seemed at first sight to admit only of amputation. There was a compound fracture of both bones, and, in addition to this, a wound of the integuments and muscles almost completely surrounding the limb at a higher part. The bones were much displaced, and the soft parts severely bruised. Chloroform having been adminis-

tered, the carbolic lotion was freely injected between the broken ends, and lint soaked in it was applied over the wound. The bones were then carefully adjusted, and retained in their proper position by lateral splints. There was not the slightest constitutional disturbance, or any discharge of matter from the cavity, to the orifice of which carbolic paste had been regularly applied, and the boy was dismissed with a perfectly straight and sound limb.

Psoas Abscess.—A man, aged forty-seven, was admitted on October 28th, with a very large psoas abscess completely distending the triangular hollow of the thigh, and having the femoral vessels running over it. About ten months previously, he had sustained a severe wrench of the spine in the lumbar region, and subsequently suffered so much pain at this part as to be confined for seven weeks to bed. Soon afterward, he observed a small swelling in his groin, which had gradually increased. On the 11th, under the protection of lint soaked in the carbolic oil, the abscess was opened by a free incision, and discharged more than a pint of purulent matter. The carbolic paste, spread on tinfoil, was then applied over the wound. Not the slightest constitutional disturbance followed; and there was no discharge of matter from the cavity, there being merely a slight serous oozing, which gradually disappeared.

Acute Abscess.—A man, aged fifty-nine, was admitted on December 4th, with a very large abscess of the forearm extending from the elbow to the wrist, which, he said, had commenced about a fortnight before, and had been very painful. On the 5th, a free incision was made, under the protection of carbolic oil, and nearly a pint of purulent matter discharged; after which the paste was applied over the wound. On the 8th, there was a little serous oozing; on the 10th, it had nearly ceased; and on the 12th, the cavity was completely consolidated.

In further illustration of this subject we quote the following cases of *acute bursitis of the knee*, healed by early incision and carbolic acid. They occurred in the practice of Mr. Tyrrell, surgeon to the Mater Misericordiae Hospital, London, and are published in the *British Medical Journal*, January 18th, 1868, p. 53.

CASE 1. A girl, aged twenty, was admitted on November 4th, suffering from severe pain in the right knee, which was much swollen anteriorly, red in color, and exquisitely sensitive. The patient was a housemaid, and attributed her disease to kneeling. There could be no doubt regarding the case. A piece of lint, six inches square, having been steeped in the solution of oil and acid, was applied over the swelling; it was then raised so far as to allow an incision, half an inch in length, to be made, and replaced so as to prevent the entrance of air into the sac. By gentle pressure about two ounces of thin purulent fluid was discharged. The patient expressed a sense of the greatest relief from the operation. An opiate was ordered. A few turns of a roller lightly applied kept the lint in its place. The girl was kept in bed, and the knee, slightly flexed, was supported on a pillow. On the following day there was no pain whatever, and, upon renewing the dressing, there was a slight serous discharge. In three days the patient was quite well.

CASE 2. A woman, aged thirty-four, was admitted on November 16th. The appearance of the knee was the same as in the former case. The inflammation was caused by a fall on the knee. The treatment was precisely the same, and the result equally satisfactory.

CASE 3. A girl, aged sixteen, was admitted on December 8th. She could not account for the swelling, as she was not conscious of having hurt herself in any

way; she complained for three days before admission. In this case the girl was very nervous, and the ether spray was used satisfactorily; the fluid evacuated was serous. The dressing was repeated every day for a week, when the patient left quite well.

Illustrations of the Hemorrhagic Diathesis.

Mr. CHRISTOPHER HEATH, of London, narrates (*British Medical Journal*, January 11th, 1868, p. 25), two remarkable cases of hereditary hemorrhagic diathesis, in which he was able to trace the tendency to bleed through four generations. The following are abstracts of the cases:

CASE 1.—James Weedon, 3 years of age, was admitted into the Westminster Hospital, in 1862, on account of a cut in the temple, which had been bleeding for some days, the boy being very much reduced. A firm compress was applied to the wound; he was placed on a nutritious diet; and the tincture of iron with dilute hydrochloric acid was administered in full doses. The bleeding did not recur; the wound healed readily under the compress, and although he had constantly bled on the slightest scratch before, he has never bled since.

CASE 2.—Charles Weedon, aged 12, the elder brother of the preceding patient, was admitted into the University College Hospital, in June, 1867. The boy's mouth presented a remarkable appearance, there being a double row of teeth in both jaws, owing to the temporary teeth not having been extracted from fear of hemorrhage. One of these latter teeth, a lower incisor, had become accidentally displaced and the socket had been bleeding for some days. It was extracted, and the socket was firmly plugged with lint saturated with the solution of strong perchloride of iron. Good diet, and tincture of iron and hydrochloric acid were ordered. No hemorrhage occurring, after several days the remaining temporary teeth were extracted, the sockets being plugged as before. When all the plugs had come away, the boy was dismissed; but, some trifling bleeding occurring from the upper jaw, he was readmitted for a few days, and finally discharged quite robust and strong.

The genealogy of these boys is of considerable interest in reference to the hereditary nature of this peculiar affection. There is this great peculiarity in the case, moreover, that the hemorrhagic diathesis is transmitted through females, some of whom had it themselves, and none of whose female descendants are affected. From the genealogical table, it would appear that the great grandfather of the patients was a bleeder, and is reported to have had bleeding father and uncles. He had three sons, all bleeders; and five daughters, none of whom bled. One of these daughters married, and had three sons and four daughters. The sons of this generation, with one exception, inherited the tendency from their grandfather, but all the daughters escaped. One of these, herself perfectly healthy, was the mother of the patients, having married F. Weedon, a healthy man. Both Charles and James have inherited the diathesis; but a boy who came between them, did not inherit the complaint, but he died at three years of age. Two girls, who died in infancy, appear to have been free from it. Mrs. Weedon has married again, and has a girl who does not bleed, and a boy only three months old, who at present has shown no evidence of hemorrhagic tendency.

1867, p. 724), narrates the case of a boy, seven years of age, who, in falling, wounded his tongue by one of his incisors. He was blanched and almost pulseless on his arrival, forty-eight hours after the accident. The physician of the family—who then could not be found—had already applied the perchloride and persulphate of iron, a sharp pencil of the nitrate of silver, and long-continued compression, without success.

On inquiry, it was ascertained that the hemorrhage from a slight cut of the finger, had nearly resulted fatally on a former occasion. Instead of the actual cautery, evidently here indicated, the application of nitric acid was substituted by the following method: A few drops of fuming nitric acid was drawn by suction into a small glass tube having a capillary extremity; this was pressed into the puncture and several drops of the acid injected into the bottom of it, by compressing the air in the tube with the lips at the opposite extremity. The arrest was instantaneous and permanent.

Prevention of Chloroform Sickness.

Mr. T. Vose Solomon writes in the *British Medical Journal*, that the prevention of sickness and retching during and after inhalation of chloroform is best attained, in private practice, by obliging the patient to breakfast, four or five hours before operation, upon the lean of a small, well-cooked mutton chop, four ounces of tea or coffee, and a bit of toast. In persons of highly-nervous temperament, or whose hearts are feeble, the administration of three ounces of hot brandy and water twenty minutes prior to commencement of inhalation, facilitates the action of the anæsthetic, prevents gastric disturbance, and insures satisfactory cardiac action.

SURGERY OF THE VASCULAR SYSTEM.

Ligations of Large Arteries.

Dr. THOMAS GEORGE MORTON, Surgeon to Pennsylvania Hospital, publishes, in the *Pennsylvania Hospital Reports*, vol. i, 1868, a review of the Ligations of Large Arteries at that hospital, between the years 1835 and 1868, including several hitherto unpublished Cases, and a Detailed Report of a Ligation of the Left Internal Iliac Artery. He says:

Since 1835, there have occurred in the Pennsylvania Hospital only seventeen ligations of the large arteries, fifteen of the operations having been for the relief of aneurismal disease, thereby showing the rarity during this period, in the hospital practice of this city, of aneurisms requiring surgical aid.

The common carotid was tied in five instances, respectively for carotid aneurism, aneurism of the ophthalmic artery, varicose aneurism, traumatic hemorrhage, and aneurism of the innominata. The last three perished, the causes of death having been cerebral congestion, recurrent bleeding, and serous effusion in the lungs.

The subclavian was ligated once in the second portion of its course for axillary aneurism. The thread came away on the eighteenth day, and the man made a good recovery.

The common iliac was ligated successfully for aneurism of the external iliac. Dr. Morton took up the internal iliac for gluteal aneurism. The ligature separated on the twenty-second day, and the man returned home in the eighth week. The

external iliac was tied in three instances, twice successfully for inguinal aneurism, and once for aneurism of the femoral and profunda arteries. The patient died of peritonitis on the third day.

The femoral was ligated twice for popliteal aneurism, twice for femoral aneurism, once for a pulsating tumor of the head of the tibia, and once for femoral arterio-venous aneurism. All of the cases did well.

The last case operated on was one of aneurismal tumor of the gluteal region, spontaneous in origin, for the relief of which Dr. Morton successfully tied the internal iliac artery. The patient, a man twenty-four years of age, had suffered for five months from what he supposed to be rheumatism of the left hip, and a tumor had been visible for four months. This gradually increased in size, and measured, on his admission into the hospital, five inches and a half transversely, and six inches and a half in its vertical diameter. It had the appearance of a chronic abscess; but distinct expansive pulsation and a bruit were detected. The bulk of the swelling was greatly diminished by pressure, but it speedily filled up when the circulation was unobstructed. The internal iliac was ligated on the 16th of October, and the man was discharged cured, so far as the operation was concerned, on the 11th of December. The tumor, however, had become quite soft, and some fears were entertained of deep suppuration.

Ligature of the Arteria Innominata.

JOE E. LYNCH, M.D., Memphis, Tenn., communicates a case of this great surgical operation to the *New York Medical Gazette*, December, 1867, and as it possesses many points of interest, for the benefit of our readers, we shall give the account in full as we find it.

Dan. Moran, aged 23 years, born in Ireland, was admitted to Memphis City Hospital, on the morning of the 19th of December, 1866, suffering from a pistol wound in the right side of the neck, two inches behind and a little above the angle of the lower jaw. The ball was said to have come out of his mouth, two of his front teeth being loosened.

On examination the wound was found plugged, and the whole side of his neck and face very much swollen, although he complained of little pain, and was comparatively free from fever. He said that the wound had bled profusely, which statement was confirmed by Dr. ORRY, who saw him soon after he was shot. The doctor stated further that the hemorrhage was venous, and that a large quantity of lint had been pressed into the wound for the purpose of stopping the flow of blood, which was alarming. He spat a little blood on that day. The dressing was allowed to remain, a saline cathartic given, and he seemed to do well for the next few days. On the fourth day, however, hemorrhage ensued, which recurred at intervals, varying from four to seven days, until the 13th of January, 1867, when a consultation was held, and ligation of the common carotid artery of the right side settled upon, which operation I performed at 4 o'clock P.M. of that day.

Sunday, Jan. 27th. The ligature came away this morning at 8½ o'clock. Patient doing very well; no inflammation about the wound of ligation or of the pistol-shot; appetite good, and the patient in the best of spirits.

Wednesday, Jan. 30th. Had a severe chill, followed by fever, last night; also, has a very hard cough; has evidently caught a severe cold.

Thursday, Jan. 31. Had no recurrence of the chill and fever, which has evidently yielded to 20 grains of quinine given yesterday morning; cough still continues hard and dry.

Feb. 2d. This morning, at 5½ o'clock, after a severe spell of coughing, hemorrhage to an alarming extent recurred from the original pistol wound, the wound of ligation having entirely healed, with the exception of a small fistulous opening at the bottom of the wound whence the ligature came away.

The wound was now plugged with lint saturated with liq. ferri persulph., and this evening the patient has rallied considerably.

Feb. 6th. Dan has had another hemorrhage this morning, and lost probably 2 lbs. of blood. He is very much prostrated in body and depressed in spirits, and requests most earnestly that something be done to prevent, if possible, a recurrence of the hemorrhage.

Feb. 13th. Has had a more violent and alarming hemorrhage this morning than any that has yet occurred. The opinion was now entertained that the ball, passing in such close proximity to the vertebral artery where it curves in its passage through the atlas, may have contused it to such an extent that the secondary ulceration along the course of the wound had divided its coats, and that the hemorrhage comes from this source. Acting on this opinion, the arteria innominata was ligated at 11 o'clock A.M., the whole proceeding occupying twenty minutes.

Feb. 14th. Patient rested very well last night, and this morning is looking better than before the operation. He is very hopeful as to the final result.

Feb. 20th. Spent a very restless night, and this morning, after a severe spell of coughing, had a hemorrhage from the original pistol wound of probably one and a half ounces, which readily yielded to pressure. The wound of ligation is granulating kindly, and the appetite good. There is, however, considerable fever.

Feb. 25th. A profuse hemorrhage occurred this morning, ending in almost immediate death.

Autopsy eight hours after death. Body well developed, muscles rigid. The two wounds in the neck dressed as usual. The dressings being removed, the ligature was found in the wound surrounded by clotted blood. The pistol wound was deep, oval in shape, extending about three and a half inches into the neck, on a line two and a half inches behind and a little above the angle of the lower jaw. It was plugged with lint and a solution of ferri persulph. The lower wound, being the one made by tying the arteria innominata, was open, and the ligature lying loose in its usual position.

An incision was made from the sternum to the symphysis menti; thence along the border of the lower jaw to the mastoid process. On removing the skin and fascia, an abscess or cavity, now filled with coagulated blood, was found in the posterior inferior triangle.

The muscles being carefully dissected back, the internal carotid and vertebral arteries were found open. Close to the carotid foramen was a kind of sac, partially filled with coagulated blood, and it was at this point that the artery was found open, the opening in the vertebral being about the centre of its curve through the atlas.

The ligature of the arteria innominata, as before said, was lying loose in the wound, and a coagulum, partially organized, filled the cardiac extremity of the vessel. But close to where the ligature was applied, say about the junction of the lower and middle thirds, was given off an *abnormal artery*, somewhat larger than

a pigeon's quill. This anomalous branch, by keeping up the circulation on the cardiac side, prevented the due organization of the clot, and consequently, when the ligature gave way, the clot was partially driven out, and fatal hemorrhage ensued.

Ligation of both Common Carotid Arteries, for Orbital Aneurism, after Failure of Compression Treatment.

Professor H. E. Foote, of the Miami Medical College, records (*Cincinnati Lancet and Observer*, February, 1868, p. 90), the case of an Irishman, twenty years of age, who was affected with traumatic aneurism of the left orbit, with exophthalmus of six months' standing. For six days digital compression of the left carotid, alternating with compression by Santorini's tourniquet, and maintained for one hour daily, was enforced without avail, when the vessel itself was taken up, with the effect of arresting the thrill and murmur in the tumor, and lessening the force of the pulsations one-half. The thread came away on the twenty-third day, but no material influence had been produced on the aneurism. Twenty-nine days after the first operation, the right carotid artery was ligated. Some delirium and spasmodic twitchings of the muscles of the extremities ensued; the thread separated on the twenty-second day, and the aneurism was relieved.

The ophthalmoscopic appearances of the left eye, and the effects produced by the operations, are interesting. On the day previous to deligation of the left carotid, examination revealed extreme congestion and tortuosity of the retinal vessels. The optic papilla was swollen, and not well defined as to its limits. Gray patches of sub-retinal exudation existed, at the circumference of which the vessels disappeared to reappear on the opposite side; and some ten or twelve ecchymoses were dispersed over the retina. The operation effected no changes whatever in these appearances. Fourteen days after deligation of the right carotid, however, marked improvement was visible. The swelling and opacity of the optic papilla were nearly absent. The vessels were much straighter. The patches of exudation had nearly disappeared; and the ecchymoses were fading and undergoing absorption. Eighteen days subsequently, the man could detect the hour of the day on the clock, and distinguish the fingers of the hands.

The exceptionally small amount of cerebral disturbance renders this case of more than usual interest. The result may be stated briefly: a complete relief of the aneurism, and gradual improvement from total abrogation of sight, along with slight subsidence of the exophthalmus.

Ligature of the Lingual Artery.

In the same journal we also find an account of the ligature of the lingual artery, preliminary to an operation upon the tongue for a morbid growth. The disease seemed to be epithelial cancer; and on the side of the ligature the morbid growth in the tongue is becoming smaller, and wasting without an increase of suppuration.

Ligature of the External Iliac Artery.

Mr. JAMES LANE, of St. Mary's Hospital, London, reports (*British Medical Journal*, January 4th and 11th, 1868), two successful cases of deligation of the

external iliac on account of aneurism. In the first, the tumor was of ten months' standing, and occupied the groin, one inch above and two inches below Poupart's ligament. A silk thread was cast around the vessel, one inch below its origin, and separated on the sixteenth day. The patient was a male, 37 years of age, and the subject of phthisis. In the second case, one of femoral aneurism, of nine months' duration, occurring in a male, 27 years of age, the vessel was tied one inch above Poupart's ligament, and the thread came away on the twenty-fifth day.

In the *Richmond Medical Journal*, December, 1867, Dr. A. F. SCHULZE, narrates the case of a man, 47 years of age, the subject of an aneurism of the common femoral, of the size of a walnut, and of two years' standing, which was attended with unusual difficulties. Digital compression of the external iliac for seventy hours having failed, the vessel was tied one inch above the origin of the epigastric artery. On the third day, pulsations reappeared in the tumor, and these steadily increasing, the common, the superficial, and the deep femorals below the sac, were taken up, the bifurcation of the common trunk being involved in the formation of the sac, with the effect of diminishing the pulsations. Seven days subsequently, hemorrhage from the superficial femoral, to the amount of thirty-two ounces, called for the injection of the tincture of the chloride of iron: but the man never rallied, and died at the expiration of seventy-two hours. A post-mortem examination showed that the external iliac was firmly occluded at the site of the ligature, and that the tumor was diminished in size, and filled by coagula.

Mr. JOHN DURHAM BIRD, of the Stockport Infirmary, reports (*London Lancet*, January 18th, 1868), the case of a man, 43 years of age, in whom he took up the external iliac, two inches above Poupart's ligament, for a large aneurism, occupying Scarpa's triangle, after the abandonment of digital and mechanical compression on account of the suffering which they excited. On the sixth day, there was slight secondary hemorrhage, which was arrested by cold and pressure. The thread separated on the following day, when there was no bleeding: but it recurred one week later, and for the ensuing eight days the attacks were so frequent as to imperil life. It was evident on each occasion that the blood flowed from the distal end of the vessel, as the hemorrhage could always be controlled by pressure below the wound. At the expiration of three months and a half the tumor had nearly disappeared.

On the Treatment of Inflammation of the Limbs by the Compression or Ligature of their Main Arterial Trunk.

The editors of the *London Lancet*, for December 7th, 1867, in calling attention to and advising arterial compression in inflammation, as suggested and practised by Dr. VANZETTI, of Padua, advert to the fact that English surgeons have carried out the principle of the practice to a bold length, neither contemplated nor approved of by Dr. Vanzetti, and would appear to claim for Mr. Little and Mr. Jackson, the merit of giving a new impulse to a plan of treatment, which is certainly deserving of an extended trial.

Professor G. C. BLACKMAN, of the Medical College of Ohio, in the *Cincinnati Lancet and Observer*, for February 1858, p. 74, while he does not question the influence above claimed for English Surgery, contributes a paper toward the

history of this method of treatment, and exhibits its results in the hands of American surgeons. From this paper we make some extracts, which go to show that arterial deligation, whether it be for good or for bad, is an old procedure on this side of the Atlantic, and that Mr. Little's ligation of the femoral artery, for the relief of acute traumatic inflammation of the knee, was anticipated by fifty-four years.

On the 17th of June, 1813, Dr. Henry W. Onderdonk, of New York, took up the femoral artery for a wound of the knee joint. The patient was cured, and the case was reported in the *American Medical and Philosophical Register*, vol. iv, 1814. A similar operation was performed by Dr. David L. Rogers, of New York, for a penetrating wound of the knee-joint, in which amputation appeared to be necessary. The artery was deligated, and the man got well by the twenty-fifth day. Dr. Mott, also, tied the femoral artery for compound dislocation of the ankle, but death ensued from trismus. In the same paper, entitled, "On the utility of tying large arteries in preventing inflammation in wounds of the principal joints," and which may be found in the *New York Medical and Physical Journal*, vol. iii, 1824, Dr. Rogers gives the particulars of two other cases, which, in his opinion, go to prove that the danger of mortification from defect of circulation is less than might be supposed. In one, that of a lad, 16 years of age, the arm was terribly lacerated by gunshot. To lessen inflammation and prevent hemorrhage, the brachial artery was ligated just as it ceases to be axillary, and recovery was rapid. Finally, in 1863, during our late war, Dr. Rogers was a warm advocate of cutting off the supply of blood by means of the ligature in joint injuries.

During the war in the United States, Dr. Daniel F. Wright and Dr. H. F. Campbell called particular attention to this mode of treatment in cases of gangrene from gunshot, the majority involving the lower extremity, and, consequently, demanding ligation of the femoral artery. In the five cases witnessed by Dr. Wright, and in the six cases reported by Dr. Campbell, immediately from the date of operation, large tumefaction was superseded by recovery of the original contour, fetid, ichorous discharges by laudable suppuration, and phagedenic gangrene by vigorous granulations, resulting in rapid separation of the eroded tissues. Dr. Campbell advocates arterial deligation for the cure of gangrene of the extremities, be it brachial deligation for gangrene of the hand, or femoral deligation for phagedenic ulceration of the calf of the leg. Dr. Wright, however, does not go so far; but would not hesitate to practise either operation if phagedenic gangrene threatened to involve the main artery of the limb.

Many other surgeons practised the same procedure during our late war. Dr. Blackman, however, does not discuss the value of the treatment; but states that he should feel reluctant to resort to the ligature, believing it to be a very serious operation.

Torsion of Arteries.

Dr. G. M. HUMPHREY, F.R.S. (*British Medical Journal*, May 23d, 1868), after some general remarks on the importance of arresting hemorrhage quickly and securely, in the treatment of wounds, and on the various modes which have been resorted to for doing this, says, the principle of the ligature and of torsion is the same. In both it is related to the fact that the inner and greater part of the thickness of the coat of an artery is composed of a brittle, though strong, elastic, and more or less muscular, structure; whereas the outer and thinner structure is of

very different character, being extremely tough, and consisting chiefly of white fibrous tissue. The result is that, in the use either of the ligature or torsion, the inner structure is quickly divided, either cleanly, as in the case of the ligature, or in a more irregular lacerated manner in the case of torsion, and the divided edges are held together, so as to close the artery, by the more resisting external coat, which is either compressed or twisted upon it—compressed by the ligature, twisted by the torsion.

Entertaining so high an opinion of the ligature, I was long unwilling to resort to any other plan. Still, I could not be insensible to the importance of improving our treatment of wounds, and to the effect which the ligature, threads, and the strangulated portion of tissue included in each knot must have in preventing immediate union of the divided surfaces. Accordingly I was induced to try the plan of acupressure proposed by Sir James Simpson, and was able to report favorably of it, inasmuch as no hemorrhage occurred in any of the cases in which I used it, and the wounds did well. Still, I hoped some better plan would be found out, for the presence of the needles in a wound, even for a short time, is objectionable; and their removal, just when a patient is beginning to recover from the effects of an operation, and is peculiarly sensitive to any impressions, and apprehensive and distrustful of our intentions, I found to be a source of annoyance; and I was anxious to find some effectual means of arresting hemorrhage without the necessity of leaving any foreign body in the wound. After thinking, therefore, a good deal on the subject, and reflecting over various modes in which the end of the vessel could be temporarily sealed, I tried the plan of torsion, which has of late been used in Edinburgh and elsewhere, and have employed it now in a great many cases, including amputation in the thigh, in the leg, and many others. Indeed, for several months I have used no other means but torsion for arresting hemorrhage; and it has answered perfectly in all the cases. There has, I think, been less pain after the operations than was experienced when we used the ligature; and the wounds have, on the whole, done better and healed more quickly. In such an operation as excision of the knee, it is especially important to prevent bleeding from the various small arteries that are divided; for, unless this be carefully done, blood will collect in the wound, between and behind the bones, after the patient is in bed, will lead to suppuration, and be a source of much trouble. To prevent this evil, I sometimes found it necessary to tie several vessels; and the presence of these ligatures with the portions of tissue strangulated by them was certainly a disadvantage. In the last two cases in which I have performed this operation, I have gladly availed myself of torsion of the arteries, and have been well satisfied with the result. Still, a greater number of cases of this and other operations are necessary, to test properly the value of this mode of closing the arteries. The plan which I adopt is, for the smaller arteries, to use a pair of clasp-forceps, which, at the end, are rather broad, and provided with fine interlocking blunted teeth, by means of which the artery is held securely during the twisting. This I continue till the coats are quite torn through, and the forceps are thereby set free. In the case of the larger arteries, I found, by experiment on the dead body, that these forceps divided the coats of the vessel, and tore their way out too quickly; so that, when I injected water into the artery by a syringe, it soon, under very slight force, separated and obliterated the folds of the inner coat, which had been caused by the torsion, made its way under the outer coat, and burst through that coat. I tried other forceps of different shapes, and found that the pair of strong narrow-

bladed hinge-forceps, which I have been in the habit of using to extract bone in operations for necrosis, answered the purpose better than any others that I have yet used. They resemble somewhat strong dressing-forceps; but the handles are large, giving good purchase, the blades meet closely, and the transverse ridges and furrows near the ends are well adapted, so that they hold the end of the artery tightly without tearing it.

I have just had an opportunity of examining a popliteal artery which was twisted in a young man after amputation six weeks ago. It was perfectly closed, was contracted, and surrounded by toughish structure for some little distance. Its internal coat was wrinkled near the end, and showed some traces of ecchymosis.

The attention to the bloodvessels after operations has occupied rather more time than it did when I used the ligature; and torsion has certainly, in my hands, proved somewhat more difficult than the ligature, requiring more care, more patience, and more perseverance. It is necessary to include the vessel itself in the forceps; for it is useless to twist the surrounding tissues; and it is not always easy, when blood is flowing, to make sure of the exact point from which it flows.

Often, therefore, when I have been twisting, I found that my efforts were of no avail, because I had not seized the exact orifice of the vessel. Even when the vessel is seized, the inner coat is liable to slip from between the blades of the forceps, the outer coat only being retained and subjected to the torsion; and this is not to be relied on. When, however, I have been sure of having seized an artery and properly twisted it, I have not known any further bleeding to take place from it; and if it be carefully done, torsion is, I think, a valuable means of securing small and medium-sized arteries, such as the tibials, facial, etc., and by reducing the number of ligature-threads, it will be found to promote early healing of wounds. Whether it will prove to deserve confidence in the case of the larger arteries, I am not so sure; but I should say that the doubt is founded rather upon what I have found in experimenting upon the dead subject than on what I have observed in the living; and it may be that better appliances and more experience may justify a greater reliance upon its efficiency. The experiments upon pieces of artery, and those upon the dead body, have proved that much care is needed in the selection of proper forceps, and in so seizing and holding the end of the vessel that its inner coat does not slip from between the blades during the twisting; and in the living subject it is not easy to make sure of doing this as it should be done, or to feel certain in any instance that the artery has been properly twisted. The only rule I can lay down is to use all care in the process, especially in grasping the orifice of the artery, and to examine well the remaining torn end after the forceps have been set free by the torsion, so as to ascertain, if possible, whether the vessel is completely closed.

I do not wish the impression that the trials of different modes of preventing hemorrhage from arteries have been made without due consideration, or that the conducting them has been unattended with anxiety. In the early years of my professional career I was severely tried by some cases in which bleeding occurred and recurred after operations. These cases produced a deep impression upon me, and made me extremely cautious and careful in securing bloodvessels, particularly in the mode of applying the ligatures, and watchful in sponging the surface and examining the tied vessels before closing the wound; and I would not have been induced to try acupressure or torsion had I not been also strongly impressed with the great importance of using all means to obtain early union of the wounds after

operations, or rather, I would say, immediate union of the whole or large part of a wound after an operation. There is no doubt that the success of operations will be increased in proportion as we can attain that result; and the prospect of attaining it must depend a good deal upon the mode in which the vessels are secured; the first desideratum being to prevent bleeding; the second, to do it in such a manner as shall least interfere with the healing process. The ligature effects the first object completely; but is so far open to objection with regard to the second as to justify the cautious trial whether other modes which promise better as regards the healing process may not be equally effective in stemming the blood-currents from the arteries.

We find stated in the *New York Medical Record* that Mr. SYME has bid adieu to the use of the ligature, save in the tying of the larger arteries. He employs torsion; and after this operation is completed, he clears out the wound, using a weak solution of carbolic acid and water (one part to thirty), and covers the whole over with a paste containing carbolic acid, chalk, and other ingredients.

Acupressure.

Dr. W. H. HINGSTON, L.R.C.S.E., etc., Surgeon to the Hôtel Dieu, and President of the Medico-Chirurgical Society of Montreal, says (*British Medical Journal*, May 30th, 1868):

During my ten days' residence in Edinburgh, much of my time with Sir James Simpson, I saw what I had never seen before, either in my own practice or in that of others—large wounds, requiring closure of the orifices of several bleeding vessels, uniting kindly and entirely by first intention, throughout their whole extent. A lady had her breast twice removed, the first time for scirrhus, and the second time for a return of the disease. The first time, ligatures were used, and suppuration followed; the second time, acupressure was tried, and no pus formed. The lady's description of her sufferings, when the wound was dressed daily after the first operation, was very vivid. After the second operation, she experienced no pain; and the parts were not handled, except when the acupressure-needles were removed. Another wound from an excised mamma, treated by acupressure, closed on the third day; there was no pus. And there was a third like the two now mentioned. So different was this from my own experience of similar operations, where suppuration always followed, that, like the unbelieving Thomas, I felt as though I should like to see and to feel. The former privilege was, happily, soon afforded me; the latter, however, for reasons which I shall hereafter explain, and which were quite sufficient, was denied. A fat, well-conditioned, middle-aged woman had her breast removed for a scirrhus tumor. Sir James kindly invited me to assist at the operation. Several acupressure needles arrested the hemorrhage from the bleeding vessels; the surface of the wound was deluged with water; and when all oozing had ceased, the edges were brought together and retained by metallic sutures introduced far from the cut edges; and the patient was made comfortable in bed, and enjoined not to touch the part. When we left the house, Sir James said to me, "Now watch the case, and come and see the patient often. There will be no pus." And there was no pus. I returned ten hours after the operation, when the needles were removed. Two days afterward, a thin red line indicated the site of the metallic sutures; but, on their removal, it quickly faded into health. There was no pain; no heat; no swelling; no redness,

except that above noted; no hemorrhage; no suppuration; no fever. This, methinks, is somewhat different from the results we observe in operations generally. For my own part, I am free to admit that I had never seen entire union by first intention when ligatures had been used; nor do I think it possible. Often have I seen the edges of a wound brought well together, uniting nicely; but on the fourth or fifth day, or later, pus would certainly show itself at some corner, and continue to pour forth, in greater or less abundance, for an indefinite period. To what was due the absence of pus in the cases mentioned? Principally to the substitution of acupressure for deligation, but also to a variety of other circumstances, which may be hastily enumerated as follows:

1. Thoroughly closing every bleeding vessel without tying them, so as to prevent hemorrhage entirely.
2. Thoroughly drenching the wound-surface, and removing thereby all extraneous matter, as pieces of sponge, small clots of blood, etc., that might otherwise remain.
3. Giving sufficient time to allow the raw surface to become quite dry.
4. Bringing the lips into perfect and easy coaptation, and retaining them there by metallic sutures introduced far from the cut edges.
5. Avoidance of all handling, pressing, and kneading of the part, to ascertain if union is complete.

Temporal Artery.—A young lad had his right temporal artery severed by a stone flung by an unfriendly hand. Hemorrhage was profuse. The practitioner called to him tried pressure, which for the time was successful, but hemorrhage returned; and, on the day mentioned, a month after the injury, he was brought to my place bleeding profusely. A needle was inserted according to the first method. No more bleeding occurred; and the needle was removed on the second day.

Inferior Coronary Artery.—An old French Canadian submitted to excision of a large part of the lower lip for epithelioma. One needle was used. The patient left at once for the country, with instructions how to remove the needle on the following day. There was entire union by the first intention.

Radial and Ulnar Arteries.—A young German had his arm crushed in a mill in Western Canada. Amputation had been performed at the wrist; but, on his arrival in Montreal, I found it necessary to remove the limb near the elbow. The needle was used to each vessel, according to the fifth method (which I am disposed to think one of the best). The needles were removed on the second day. There was no hemorrhage; and union at that part was well advanced, though suppuration continued at other parts from an extension of the injury.

Epigastric Artery.—In an operation in a young gentleman for strangulated inguinal hernia, I divided the epigastric artery. A pin was used, according to the fifth method, and I proceeded to complete the operation, and effected reduction without any further trouble. The pin was allowed to remain twenty-four hours; and union of the wound took place by first intention.

Arteries of the Sole of the Foot.—These were treated by acupressure-pins. Hemorrhage was entirely checked; but the injury for which the operation was performed (frost-bite), and the extensive destruction of the tissues generally, made it difficult to say how much was due to the pin, and how much to the pre-existing inflammation which had helped to close the arteries.

The above cases occurred within a short period of each other; and I lay them before the members of the profession, in the hope of aiding in the substitution of

a simple, easy and safe method of doing the work of the ligature. Once only since my return have I used the ligature. I had removed the greater part of the lower jaw of an old man for malignant disease. The loose condition of the tissue made me fear the insufficient firmness of the background for the employment of acupressure to the facial or its branches; but I now regard the laxity of tissue as affording additional facilities for the use of acupressure.

Briefly, to conclude, I know no circumstance which could obtain to induce me to prefer the ligature to that simple and speedy method for the introduction of which suffering humanity has again to be a debtor to Sir James Simpson. As regards the difference in time occupied, I think I am quite within the truth when I state that the insertion of the acupressure pins or needles in the cases above cited did not occupy more time in the aggregate than does the search for, isolation, and tying of a single artery; and when the practice becomes as familiar as deligation, the closure of a spouting vessel will be readily effected before the second jet occurs.

Dr. R. McDONNELL, of Dublin, narrates (*British Medical Journal*, January 18th, 1868, p. 537), a case of amputation of the thigh, in which hemorrhage occurred on the removal of the needle which bridged the femoral artery, forty-eight hours after the operation. This was arrested by an aneurism compressor adjusted over the femoral artery at the groin, and did not recur on the removal of the instrument twenty-four hours subsequently.

Treatment of Arterial Aneurisms by Injection of the Perchloride of Iron.

We seize the earliest opportunity of laying before our readers the views of the well-known French surgeon and writer, M. GOSSELIN (lately appointed as professor in the Surgical Clinic of La Charité), upon the treatment of aneurismal tumors of arteries, contained in a paper recently laid before the Academy of Sciences, and published in the *New York Medical Record*.

These views are important as coming from such an experienced surgeon. Contrary to the old practice, the new surgeon of La Charité rejects alike the ligation of the branches which nourish the tumor, or of the principal trunks of one or both of the primitive carotids; for example, when these tumors have their seat by the head, as is often the case. He has the same views, likewise, in regard to the total ablation of the tumor, which he considers as dangerous, and which indeed is only applicable in season, except where these tumors present a large surface. He prefers to all these different means the often-repeated injection of the perchloride of iron, thrown even into the very course of the tumor.

Without doubt, this treatment has its inconveniences. After the injections, we may see now and then small ulcers, very exuberant and rebellious, showing themselves, by which a quantity of clots escape,—these clots due to contact with the perchloride,—and they retard for a long time the cure; but the final result is none the less favorable.

It may happen, likewise, that phlegmasia, induced by the perchloride, terminates in suppuration, and gives rise to consecutive hemorrhage. In such an event, M. Gosselin employs the actual cautery, as much with a view of arresting hemorrhage, as to complete the obliteration of the vascular tumor, and his success has decided that he was right.

Cure of an Axillary Aneurism by Slight Compression.

Dr. BECK (*Deutsche Klinik*, No. 44, 1867, and *Brit. Med. Journal*, March 14th, 1868, p. 247), has reported a remarkable case of a man who was affected with an aneurismal dilatation of the right axillary artery, of fifteen months' duration, and whose left subclavian artery was absent, the left superior extremity being supplied by the ascending cervical, transverse scapular, and costo-cervical vessels. In consequence of this anomaly, and also of symptoms of slight aortic dilatation, Dr. Beck did not venture to tie the right subclavian, but treated the axillary aneurism by placing his patient on a low and farinaceous diet, in order to reduce the force of the circulation, and by compressing the tumor with a broad band of caoutchouc and several turns of a bandage. The man left the hospital at the end of ten days, but continued to wear the elastic band for two months, during which time the pulsations of the aneurism gradually ceased, the tumor became small and hard, and the fingers of the right hand became livid and wasted. A complete cure was the result.

Ligature of the External Iliac Vein.

We find the following rare case described in the Reports of the Boston City Hospital (*Boston Medical and Surgical Journal*, Feb., 1868):

T. T. H., æt. 21, colored, was stabbed in the left inguinal region with a common shoe-knife, Jan. 28th. When the wound was enlarged, the external iliac vein was found to be nicked and bleeding. A ligature was applied on each side of the wound in the vein, and the external wound closed partly with three silk sutures.

Treatment of Varicose Veins.

Dr. STEPHEN SMITH, Surgeon to Bellevue Hospital, N. Y. (*Medical Gazette*, May 2, 1868), says: The treatment of varicose veins is palliative, or radical. The palliative treatment is directed to the external support of the veins, by means of such appliances as may be adjusted to the part, by far the best of which is the elastic stocking.

The radical treatment aims at the obliteration of the vein, and hence a permanent removal of the conditions on which the disease depends. In carrying out this treatment we must necessarily resort to operative measures, and no one of the various operations hitherto adopted has proved to be free from danger. Too frequently inflammation has occurred, and occasionally it has assumed a severe type, and terminated fatally. The form of inflammation most dreaded was phlebitis, or inflammation of the vein itself. This disease was thought to be almost certainly induced when the vein was simply wounded, and but few surgeons had the hardihood to penetrate a vein in their operations. But inflammation also frequently occurred when the instruments employed were passed in the neighborhood of the vein, or when excision of the vein was performed, and occasionally proved disastrous. These results have from time to time brought nearly every operation into more or less disrepute, and rendered surgeons timid about resorting to radical measures.

The obliteration of the vein by caustics has given more general satisfaction than any single method. And yet it is not free from severe if not dangerous consequences. We do not always sufficiently limit its local action, and it may

then penetrate deeply, and extend widely, and do great harm. It is not, therefore, a remedy which can be placed in the hands of every practitioner with perfect safety.

Of the two methods of treatment, namely, the palliative and radical, the latter is infinitely preferable, provided our procedure is safe and effective. Those conditions, I think, have now been secured. The method to which I refer is the injection of the vein with persulphate of iron. The operation has been performed frequently in this hospital, and with the happiest results.

The attention of the profession of this city was first called to this method of treating varicose veins by Dr. Minor, of Brooklyn, in 1860. He reported five cases, in all of which the injection was successful, and in none were there unfavorable consequences.

It may seem strange that an operation which involves puncture of a vein should be attended with no severe inflammatory symptoms, when the older operation by transfixion was so frequently dangerous, and occasionally fatal. This is explained by the fact, that in injections the vessel is itself medicated by the persulphate, which tends powerfully to arrest the inflammatory process.

It must be stated, also, in regard to the persulphate, that it is a non-irritant to the internal membrane of the vein. However freely it is employed, the inflammation is still very inconsiderable, rarely amounting to more than a blush of redness, and slight swelling; and at the most giving but a small subcutaneous abscess, or, as in one case, a light erysipelas. You must remember that I speak now of the persulphate of iron. Some have mistaken, and have employed the perchloride, which, though powerfully hæmostatic, is nevertheless an irritant, and creates frequently considerable local inflammation.

The immediate effects which we obtain by injections of the persulphate are the same as those which we seek by other methods, namely, the formation of a clot. This clot is very firm, and at once perfectly occludes the vessel. It is much more firm and effective than those clots which form from external pressure, or other mechanical agencies.

The operation is very simple, and can readily be performed by any one. A common subcutaneous syringe is first charged with the liquid persulphate (Squibb's preparation); the patient takes the erect position so as to distend the veins of the leg; the needle of the syringe is then passed into the cavity of the vein, which is pressed by the finger, and five, ten, or fifteen drops injected; in a few minutes the clot is detected by external examination, and the needle is withdrawn. The patient should remain in bed for several days, and cold applications be made to the puncture.

As a precautionary measure, I always apply a compress and roller over the trunk of the vein on the cardiac side, to prevent the possible escape of a coagulum from the mass into the general circulation. I usually inject the larger trunks, and generally inject at several points at one sitting.

In the treatment of varicose veins, therefore, you should, in my opinion, adopt radical measures. The time is passed when you should be satisfied with merely palliative treatment in a case which demands interference. Palliative measures, as the term indicates, are not curative; they leave the affected part in no better condition than when first employed; they are a constant source of annoyance, and to the poor a burdensome expense, which cannot long be endured.

In the method by injection of the persulphate we have a remedy which answers every indication, and may be regarded as entirely safe and efficient.

SURGERY OF THE NERVES.

Excision of Portions of the Median Nerve.

In the *Buffalo Medical and Surgical Journal*, December, 1867, p. 175, Dr. MINER reports two cases of excision of a part of the median nerve, of which the following are extracts:

CASE I. A man accidentally wounded himself in the arm, the ball perforating the soft parts, two inches above the condyles. The wound had closed in nine weeks, but most excruciating pain was experienced in the hand, which was flexed. At the expiration of twenty-two weeks the pain had become so intolerable that Dr. Miner made an incision down upon the nerve, and excised three inches of it. It was closely involved in the cicatrix of the wound, and was in an hypertrophied condition. At the expiration of ten months, sensation, except to a certain extent along the anterior surface of the fore-arm, was perfect, and the patient was enabled to attend to his usual avocations.

CASE II. A gentleman, thirty-five years of age, consulted Dr. Miner on account of a tumor which occupied the lower fourth of the left arm, internal to the biceps muscle. The growth measured about three inches in length and two in breadth, being elastic to the touch, and presenting the characteristics of an encysted tumor. Its history extended over a period of five years, growing slowly, and at no time interfering with the functions of the arm, or causing any inconvenience, until within the last two months, when it rapidly augmented in size and became exceedingly tender on pressure, and too painful for endurance. An incision of three inches over the tumor having been made, and the tissues pressed to one side, the neuromatous condition of the median nerve was discovered, about one-third of the fibres of which were widely separated and expanded over the anterior surface, again uniting with the common trunk just above the bend of the elbow-joint. Upon its posterior surface the nerve-fibres were more closely connected with each other, and not so intimately incorporated with the cyst, their separation from the same being more readily effected. The two extremities of the nerve having been divided, the tumor was easily removed, there being no more adhesions than are ordinarily found in encysted growths.

Partial paralysis of the fore-arm and hand followed the operation, but all neuralgic pains ceased. One month after the operation there was partial restoration of the functions of both hand and arm, the remaining disability consisting mainly of loss of the power of the extensor muscles of the hand, while the flexors appeared nearly perfect.

Excision of the Inferior Dental Nerve, on account of Intractable Neuralgia.

In the *American Journal of the Medical Sciences*, for January, 1868, may be found reports of four cases of excision of the inferior division of the third branch of the trigeminal nerve, by Professor S. D. GROSS. In three of the cases the cause of the neuralgia was referable to an inflamed condition of the nerve, combined, in one, with limited atrophy, from pressure exerted upon it by concentric hypertrophy of its containing canal; and in one, to the latter lesion alone. Five months,

four months, three weeks, and four years and a half had elapsed, at the date of the report, since the operations were executed, and the relief was perfect. This immunity from suffering was due to the fact that the entire portion of the nerve contained in the dental canal, from its point of entrance to that of exit, was excised; for which purpose from three to five disks of bone required removal by the trephine. In this way from two inches and a half to three inches of the affected nerve were excised.

Traumatic Tetanus, treated by Counter-irritation.

Dr. L. P. GEBHARD gives (*Medical and Surgical Reporter*, February 4th, 1868), two cases of well-marked traumatic tetanus, treated successfully by counter-irritation applied to the spine, after anodynes had been fully tried, and had failed to give relief.

THE EXTREMITIES.

Four Cases of Angular Osseous Anchylosis of the Knee, treated by Subcutaneous Intra-articular Drilling and Disruption.

By S. D. GROSS, M.D., Professor of Surgery in the Jefferson Medical College, Philadelphia.

Dr. S. W. GROSS contributes to the *American Journal of the Medical Sciences*, for April, 1868, p. 360, a paper bearing the above title, in which he describes an operation, devised by Professor GROSS, for the relief of synostosis of the knee-joint, which has been successfully practised in five instances. We extract the first case entire, as it forms a good illustration of the method of procedure:

CASE I. Henry M., twenty-two years of age, presented himself at the clinic of the Jefferson Medical College on the 30th of October, 1861, on account of bony anchylosis of the left knee, the leg being flexed at nearly a right angle with the thigh. Nine years previously, while mowing, he accidentally opened the joint with a scythe, and the injury was followed by violent inflammation and constitutional disturbance. During his prolonged confinement the limb was unfortunately placed in a bent position, in which it became stiffened, compelling him to use a crutch. There was no deformity of the joint, and a scar marked the site of the original wound.

The diagnosis was synostosis of the knee, and was based on the following points: absolute immobility succeeding traumatic inflammation; a fixed state of the patella; a sensation to the touch of thorough consolidation of the articulation; no tension nor resistance of the flexor muscles on attempts at forcible extension; and freedom from pain both in front of and behind the joint during similar efforts.

The nature and perils of the operation proposed for the relief of the deformity having been fully explained to the patient, and his entire consent having been gained, Professor Gross proceeded as follows: Chloroform having been administered, a longitudinal incision, hardly one-half of an inch in length, was made over the outer surface of the knee, near its middle, in a line with the groove between the head of the tibia and the external condyle, down to the two bones. Through this opening a steel perforator was introduced, keeping it as nearly as possible in the direction of the line of the articulation, and passing it on to the opposite side until the point could be felt beneath the integuments. The instrument was now moved about in such a manner as to cut through and break down the osseous ad-

hesions between the femur and the tibia on the one hand, and the femur and patella on the other. The union between the bones was exceedingly firm; but, after much difficulty, they were finally overcome, and by a forcible extension of the limb, the parts yielded with a cracking noise. The small wound was carefully closed with two twisted sutures and strips of collodion plaster, confined by a compress and a roller carried from the toes to the middle of the thigh. The leg was brought to an angle of 45° with the thigh, and laid in an easy position upon its outer surface, a thick pillow being placed behind the knee. No blood was lost in the operation, and, as the patient was fully chloroformed, not a particle of pain was experienced. Half a grain of morphia was given as soon as the effects of the anæsthetic had passed off, and recumbency, light diet, and cooling drinks enjoined.

No constitutional disturbance followed the procedure; the entire immunity from suffering being doubtless due to the fact that the natural structures of the joint had been completely destroyed. For four days the limb was allowed to remain perfectly quiescent, when an extending apparatus was applied, and the limb was straightened daily several degrees. At the expiration of three weeks the patient was allowed to go about on crutches; the dressings having been removed on the tenth day, when the wound was found to be perfectly united, and the pins were removed. In the sixth week the man was discharged well. At this time, the ruptured surfaces were thoroughly consolidated, the knee being very slightly flexed, and the limb shortened one inch, it having been deemed an advantage in progression to have some shortening of the affected member.

In two of the cases some constitutional disturbance followed the operation. In one this was extremely slight and evanescent, and the joint was merely a little tender and swollen for several weeks. In the other, however, severe local inflammation and traumatic fever set in on the tenth day, and, for three weeks, the patient's condition was somewhat critical; but he ultimately recovered with an excellent limb. These untoward symptoms could only be referred to the presumed fact that the synostosis was not complete; but there was no escape of synovia to indicate that such was really the case.

In addition to breaking up the bony adhesions with the perforator, or chisel, it was found necessary to divide subcutaneously the hamstring tendons in two of the cases, as a preliminary measure. It is further advised that the knee should be brought at such an angle after the procedure that the shortening will amount to, but not more than, one inch when the patient stands erect, as it is deemed a very decided advantage in progression to have some shortening of the affected member.

Subcutaneous perforation and disruption of angular synostosis of the knee, for the relief of the deformity arising from it, is, for the following reasons, recommended as a substitute for all other operations:

1. Being a subcutaneous procedure, it is, on that account, far less hazardous than the operations of Barton and Buck, which are a species of compound fracture, and, therefore, liable to all the dangers and accidents which attend that injury.

2. The shortening is far less than that resulting from any of the other methods of cure, this, indeed, being entirely dependent upon the pleasure of the surgeon. Shortening of one inch is, however, advised, since it renders locomotion less awkward.

3. It occasions no unsightly deformity at the knee itself, beyond flexion at a very slight angle. Both Brainard's and Barton's operations, more particularly the latter, are attended with an ugly deformity, from the knee being rendered unusually prominent by bending the limb at the point of fracture of the femur. Although Buck's procedure leaves a more symmetrical limb than either of these methods, this advantage is counterbalanced by the protracted suffering, undue shortening, and greater mortality resulting from it.

4. The duration of treatment is much shorter, thereby subjecting the patient to less inconvenience and annoyance from prolonged confinement in the recumbent posture.

5. The object of the operation being to break down and weaken the osseous bands in such a manner as to permit them to be fractured with a moderate degree of force, the popliteal artery is not endangered. In one of the cases by the method of Barton, the femoral artery had to be taken up on the thirteenth day, on account of bleeding from the popliteal, which had been injured by a sharp point of bone.

In reviewing the different modes of attacking surgically synostosis of the knee at a faulty angle, Dr. S. W. Gross refers to all the reported examples of operation, thirty in number, from which he derives the following death-rate. It may be premised by stating that the operation of Barton consists of excising a wedge-shaped piece of the femur above the condyles; that of Buck of removing a wedge from the joint itself; while the procedure of Brainard is confined to subcutaneous drilling and fracture of the thigh-bone above the articulation.

Of these thirty operations, thirteen were performed after the method of Barton, of which two, or 13.58 per cent., were mortal; eight were practised after the method of Buck, and of these two, or 25 per cent., ended in death; four were of the nature devised by Brainard, all of which were successes; and five were after the method described in this paper, all of which likewise recovered. The first twenty-one, partaking, as they did, of the nature of compound fractures, alone furnished the mortality, thereby affording additional evidence of the superiority and comparative innocuousness of subcutaneous operations.

Wounds of the Ends of the Fingers—Treatment by Splints.

In the *New York Medical Journal*, for February, 1868, p. 338, Dr. IRENEUS G. CARDNER, of New York, having had many wounds of the fingers in girls employed in a paper-collar manufactory, and who has made the subject a special study, says: The injuries were received while attending the embossing or stamping machines, and never involved more than the distal phalanx. Sometimes the flesh and nail were jammed off, leaving the bone uninjured; but more frequently the tip of the phalanx was crumbled off, leaving a part of it projecting and bared. From the nature of the machines, the soft parts were uninjured up to the very point of contact with the die.

Instead of nipping off the bone, which was often exposed to three-fourths of an inch in length, Dr. Cardner adopted a conservative course, which consisted in applying four leather splints, which projected an inch beyond the end of the phalanx, and were firmly confined from above downward by a roller. A piece of lint wet with a lotion, which consisted of a weak decoction of rum, opium, and cort. hamamelis virginianæ, with a little liq. sodæ chlor. added when indicated,

was inserted between the projecting ends of the splints, but not upon the phalanx, and the whole hand was bandaged and kept wet with water. The parts were cleansed every second or third day by undoing and turning back the splints. Under this treatment, granulations sprung up slowly from the periosteum, but pushed forward faster from the free margins of the wound. In about ten days the bone would be completely covered, the finger of full size, and of any shape to which it might be moulded by the splints. At this time, the nail-bed in the corium could be distinguished; and, by care on the part of the patient, the result was a perfect finger, if the phalanx was uninjured, with a well-formed nail, in from three to four weeks. The lotion and splints were continued until the epithelium had grown up to the end of the finger, when the remainder of the wound was allowed to cicatrize, and applications of tincture of iodine were made.

Fractures of the Elbow-Joint.

Dr. HENRY J. BIGELOW, of Boston, Mass. (*Boston Med. and Surg. Journal*), holds that in simple fractures of the elbow, except of the olecranon, *passive motion*, as laid down in works, is radically wrong and unnecessary; it occasions excessive pain during the operation, and begets active inflammation, besides injuring severely the part under repair, which nature in her own good time will restore better without than with it.

II. MECHANICAL SURGERY.

A New Endoscope.

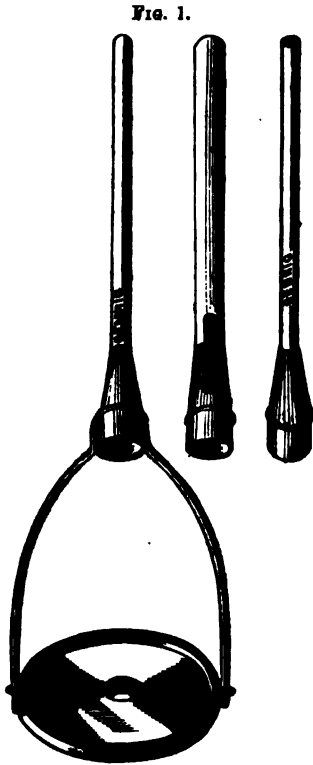
Dr. PHILIP S. WALES, Surgeon U. S. Navy, in a communication to the *Medical and Surgical Reporter* (June 13th, 1868), after enumerating some objections to the Endoscopes of Desormeaux and Cruise, gives the following description of a new Endoscope, combining the important features of simplicity, moderate cost, and home manufacture. He says:

I have elsewhere (*Medical and Surgical Reporter*, May 9th, 1868), described the instrument of Dr. Warwick, which is free from many of the objections which I have urged against the others; besides it has the advantages over them of greater illuminating power, and being cheaper. I had an instrument made for me, constructed upon the same optical principles as Warwick's, with which I am enabled to obtain very good results; but the necessary lenses and accessories made it still too costly; about \$30 was the price.

After numerous experiments, I have the satisfaction of now presenting an endoscope, shown in the annexed cut, at once efficient, simple in construction, with great illuminating power, and moderately cheap.

As furnished by Mr. Gemrig of Philadelphia, the case contains the illuminating mirror, urethral, vesical, and rectal tubes, a stricture knife, porte-caustic, and a twisted-pointed wire stylet.

The peculiarity of the instrument is the mode of illumination ; which is effected by a concave mirror, three inches in diameter, and ten inches focal length, perforated at its centre. The mirror is supported in a metallic frame, consisting of a broad ring, which is intended to slip over the proximal end of the tube ; two slender arms, about five inches long, project posteriorly from the ring, and clasp the mirror at opposite points of its periphery, where the connection is secured by two little milled-headed screws. By this arrangement, the mirror is movable around its vertical and central axes, so that it can be set at any desired angle to receive the light which is to be conveyed into the tube.



The source of light may be either natural or artificial. Sunlight yields the best results, enabling the observer to see distinctly the minutest details of the field under observation. As it is impossible in the majority of cases to use sunlight, a gasalier may be employed. In my examinations, I prefer Tobold's modification of the common reading-lamp, with which the light may be concentrated upon the mirror.

In using the instrument, the patient may either stand up or lie down. The lamp is placed at his side, in a darkened room, and the surgeon having put his eye behind the perforation in the mirror, adjusts the latter with his right hand, so that light may be thrown into the tube, which is supported in the bladder or urethra by the left hand. As soon as the interior of the tube is fully illuminated, the field formed by the mucous membrane covering its end will come in view.

NOTE.—In a future article upon otoscopy I shall describe an instrument, constructed upon the same optical principles, for the exploration of the ear.

The Sectional Ligature—A New Method of Arterial Compression.

Dr. R. E. VAN GIMSON, of Greenpoint, New York (in the *Medical and Surgical Reporter*, February 1st, 1868), gives a new method for the compression of arteries,

FIG. 2.



designed especially for the treatment of aneurisms, which consists in the use of an apparatus called, in lieu of a better name, "The Tube Compressor," consisting of two slightly tapering silver tubes, and a connecting medium of silk or fine metallic

wire. At the internal or arterial extremities the tubes have a certain amount of curve, depending upon the artery to be included. The aperture at the arterial extremities of the tubes is almost capillary in size, just large enough for the wire to pass easily, and situated as near as possible to the outer side of the tube, so that the bottom of the tube is nearly solid when in contact with the artery.

At the external ends of the tubes a screw is to be adapted for graduating pressure.

Mode of Application.—The artery being exposed, the wire is first passed beneath it, and the ends brought out at the incision; over each end of the wire one of the tubes is now passed down to the vessel, and their internal extremities brought in contact. The protruding wire is now bent abruptly over the end of each tube, and the external ends of the tubes brought together by means of the screw, or, the ends of the wire may be wound around a wedge of cork between the tubes; by altering the position of which, or turning the screw, the amount of compression is obtained. The removal of the apparatus may be accomplished in one of two ways, according to the depth of the artery. If superficial, the end of the wire over one tube can be cut and the tube of that side removed, and afterward the other tube

FIG. 3.

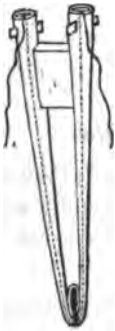


FIG. 4.

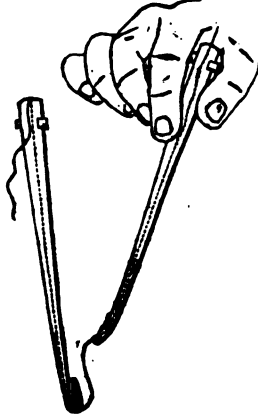
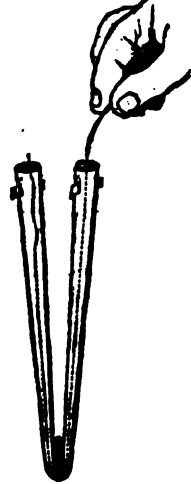


FIG. 5.



and wire attached, Fig. 4. Or, if the artery is deep-seated, let both tubes be firmly held in a clamp, now cut the ends of the wire and draw it steadily through the whole length of both tubes, Fig. 5.

In applying the apparatus care should be taken to prevent the pressure of the tubes downward beneath the artery; to obviate which, a strap with a clamp to hold the tubes in position could be adjusted to the part. The same contrivance would aid in holding the tubes firmly in place while removing the apparatus.

The advantages which seem apparent in the apparatus are—

- 1st. Ease of adjustment.
- 2d. Ease of graduating pressure.
- 3d. Ease of removal.
- 4th. No tissue, except that of the artery, is subjected to compression.

New Instrument for Transfusion of Blood.

Dr. ROUSSEL, of Geneva (*Union Médicale*, November 26, 1867), has invented a new instrument for transfusion of blood. It rests on two new ideas: 1st. To surround the taking of the blood with a cylinder opened at its two extremities, deprived of air, and impermeable to the air. 2d. To practise venesection under water, and propel the blood in a channel filled with water and void of air, connecting directly and hermetically the vein which furnishes the blood with the vein which receives it.

American Improvements in Surgical Apparatus.

Very decided and flattering preference was given to American improvements in surgery at the Paris Exposition. In the official Report of the Imperial Commission, credit was given to Dr. C. F. TAYLOR, of New York, for exhibiting the only improvements in apparatus for the treatment of Orthopedic and Military Surgery. Of these apparatuses some were for vertebral deviations dependent upon "Pott's disease," others for lateral curvature, etc. The sanitary collection of Dr. Evans received the highest prize—gold medal—and the Howard Ambulance was received with unanimous approval.

III. MILITARY SURGERY.

The Search for Balls in old Gunshot Wounds.

Dr. M. GOLDSMITH, of Rutland, Vermont (*New York Medical Journal*, February, 1868, p. 426), after having pointed out the difficulties which occasionally attend the search for balls in old cases of gunshot wound, calls attention to a new plan of treatment, which he illustrates by the following case:

A color-bearer in one of the Vermont regiments received a gunshot wound in the hip. The ball entered at a point midway between the antero-superior process of the ilium and the great trochanter. Nothing was discoverable of its direction except that the fistulous canal leading from that point passed backward and toward the dorsum of the ilium. On the thigh, and on its posterior surface and just above its middle, there were two other fistulous openings. At some period in the history of the case, the parts at the aperture of entrance had been attacked with hospital gangrene, for which bromine had been applied. The eschar following this had indurated the tissues round about, so that this opening was too small to admit the finger. A probe passed backward toward the ischium about a finger's length. No point of tenderness or of fluctuation could be felt anywhere in the hip, buttock, or thigh, nor did pressure reveal any fountain of suppuration.

The man stated that the most persevering efforts had been made, in several hospitals, from which he had from time to time been removed, for the discovery and removal of the ball. He was very much emaciated. He had bed-sores. The discharge was profuse, chiefly from the opening on the thigh. His cheeks had a hectic flush. Of course, an operation which contemplated a division of the glutei throughout their extent, an operation giving traumatic surfaces almost equal to those of a hip-joint amputation, was not to be thought of.

The methods used in this case were those devised by Dr. S. W. GROSS, while in

charge of the Jefferson U. S. A. General Hospital, for the search for, and removal of, balls in such and analogous cases.

In the first place, the aperture of entrance and the upper opening of the back of the thigh were dilated with sponge tents. When these apertures had been made large enough for the reception of the finger, the canals were explored as far as the finger would reach. Of course no ball was found, but the general direction of the sinuses was accurately determined. Guided by the finger, the canula of a long curved trocar (such as is used for tapping the bladder from the rectum), was passed along the sinus, leading from the upper aperture, and as far as it could be made to go, keeping in the canal. The point of the canula being now pressed so as to project the superficial parts, the stilet was introduced, and the point of the instrument made to emerge through the skin. The stilet being withdrawn, a long edged probe, armed with a strong double ligature, was passed through the canula, and the latter withdrawn. With the aid of the ligature a stout piece of linen was drawn into the opening made by the trocar. A like procedure was gone through with at the lower opening. As soon as the pieces of linen in these openings lay loose enough, they were removed, and compressed sponge tents took their place. When the new openings were large enough to admit the finger, it was introduced, and the regions in reach explored. Meanwhile the old openings had begun to contract, and were not afterwards interfered with. It will be seen from this, that we were approaching the ball by two converging lines, and that all of the region intervening between the new and old openings had been thoroughly searched by the finger, as well as a finger's length in advance of each. As the areas of suppuration diminished, the quantum of pus lessened.

From these second openings a second advance was made, the process being the same. On examining the second point of approach from the thigh, it was found that the canal bifurcated. The trocar was carried through the deeper canal, as in the former instances, and when the finger could be got in to explore, the ball was found on the margin of the ischio-rectal fossa, as the operator was informed by Dr. Fox, who was in the immediate charge of the patient. The removal required but a slight touch of the knife to facilitate extraction with the forceps.

The patient began his convalescence with the establishment of the first openings, and during the past summer has been able to work in the hay-field with as much effect as he ever did.

The methods employed in this case are exceedingly flexible; capable of adaptation to a great variety of conditions.

With their use there has as yet been no instance in which the ball could not eventually be found, or in which they did not lead the way to finding it. Inasmuch as this method may be made to supersede, in a multitude of cases, more sanguinary measures, it seems to deserve the consideration of surgeons.

The difficulties sometimes met were overcome in various ways.

Occasionally so sudden a flexure was found in a canal that the rigid canula would not pass without laceration of some part of the wall. In some such cases a long sponge tent was introduced to open the way for the canula. Sometimes a small catheter introduced first served as a director over which the canula could be introduced.

Then, again, it was occasionally found necessary to form the sponge tent around a piece of catheter, so as to allow the pus to escape without hindrance.

Whenever the dilatation of the opening proved especially painful, the skin of the aperture was notched a little way with a knife.

Finally, it always seemed to be important that the pyogenic membrane of the fistulous canals should be lacerated as little as possible.

Holes by Bullets.

In one of our foreign exchanges (*La France Médicale*, October, 1867), we find the following interesting experiments in regard to the holes made by bullets:

Bullets which penetrate an earth half moist, like clay, make a hole larger at the entrance than at the exit. To determine this, construct a massive frame of timber, and fill it in for five or six yards with clay. In firing now with a shot No. 24, the hole presents the appearance of a funnel, having a diameter of one yard and thirty centimetres at the entrance, and of fifteen centimetres at the exit. This effect is due to the transmission, or not, of motion by the air. This can be proved by examining a section of either of the orifices. It is always composed of a circle, with small concentric arcs, showing interruptions darkened by the sulphurous gases carried along with the bullet. In making up the total of these elements, we find exactly the length of the circumference of the projectile. The effects of communication of movement are moreover more energetic when the clay is somewhat compressed. All the resistance of the centre to the penetration is represented by two conditions,—the one is dependent on the swiftness, the other is proportional to the square of this swiftness,—whence we deduce the equation of the curve, which is a logarithm, even as such is designated in geometry. When we turn over the profile impressions next morning, we can determine a diminution in the length of all the diameters obtained, which proves that clay is gifted with a certain elasticity, which only shows itself at the end of a certain time.

The same effects have been observed in experimenting on masonry, but they are less appreciable.

Gunshot Wound of the Cervical Vertebrae and Spinal Cord—Survival 51 Days.

In the *Atlanta Medical and Surgical Journal* a case is recorded where Private G. was wounded in the neck by a bullet. He lived 51 days. An examination revealed that the ball had passed through the lamina of the fourth cervical vertebra, severing entirely the lamina attached to the vertebra from the spinal portion, so that the spinal portions of the bone were lying loose in the half-formed sac around the injured bone. The sheath of the spinal marrow, posteriorly, was cut across, and about two-fifths of the spinal marrow was severed.

Gunshot Wound of Profunda Femoris Artery—Ligation of Divided Ends.

Dr. LE GRANDE CAPERS, of New Orleans, narrates (*Richmond Medical Journal*, December, 1867, p. 517) the case of a sergeant who was wounded in action by a ball, which severed the right profunda femoris artery, and divided the femoral sheath for two inches. Profuse hemorrhage occurred, which was arrested by a hastily constructed tourniquet, and the man was sent two miles to the rear. On his arrival, a large diffused tumor was discovered at the anterior and inner portions of the thigh, principally above the point of application of the tourniquet.

An incision, four inches long, laid the swelling completely open; clot and fluid blood were turned out, and the profunda was found to be severed about an inch and three-quarters below its point of origin. Both ends were taken up, not, however, without hemorrhage and much difficulty. The man recovered; the proximal ligature having come away on the twenty-second day, and the distal ligature on the seventy-second day.

Character of the Wounds inflicted by the Chassepot Rifle.

We find it stated in one of our foreign exchanges, that although with this arm a multitude of missiles can be scattered over the field in a few minutes, and therefore a great number of men rendered *hors de combat*, yet, by reason of the small size of the projectile, the number of fatal injuries is very small in proportion to the total number of wounded.

It has been ascertained on many battle-fields that the Chassepot bullet rarely shatters a bone, but, in a large majority of cases, passes around it.

Treatment of Wounds.

The *Edinburgh Medical Journal*, March, 1868, says the following brief extracts from a leading article in the *Gazette des Hôpitaux*, No. 141, December, 1867, from the pen of Dr. Victor Revillout, will be read with interest at this time, when so much is being done with the view of facilitating the union of wounds, and avoiding the dangers of suppuration. He contrasts the principles and methods of Guerin, Maisonneuve, and Lister. "Guerin wishes to prevent, as far as possible, the contact of air, and thus to place open wounds in similar conditions to subcutaneous ones. Oxygen, in his eyes, the principal cause of suppurative inflammation; and by excluding it, he hopes more easily to obtain immediate union." He endeavors to obtain this end by fixing over a stump a nightcap of India-rubber, which communicates by a tube with an air-pump; the air being thus exhausted from the bag, it is retained in position by the weight of the atmosphere, excludes air from the wound, and maintains an equable compression.

"Maisonneuve, on the other hand, is not afraid of oxygen, but *he* is afraid of dead fluids. His conclusions are: 1. That the so numerous and varied febrile accidents which complicate most wounds, and constitute the principal danger of surgical operations, are always the result of a *poisoning*. 2. That liquids exuding from the surface of wounds die when in contact with the air; that they then putrefy and become dangerous poisons. 3. That, could we prevent the liquids from putrefying on the surface of the wounds, then the greatest surgical operations, even amputations of limbs, could be performed without danger."

In M. Guerin's apparatus, Maisonneuve believes that he has discovered a simple and practical means of fulfilling his indication. By exhausting the air, it removes the fluids effused on the wound. The surfaces having been bathed in alcohol, are brought together with strips of plaster, which do not prevent the escape of serum, etc.; then the whole is covered with a bandage soaked in some aromatic and anti-putrid fluid, such as tincture of arnica, and then the caoutchouc bag is put on.

Lister, like M. Maisonneuve, claims the honor of having been the first to discover a principle. He does not pretend to have been the first to use phenic acid (carbolic acid), but to have been the first to use it with method and with a clear

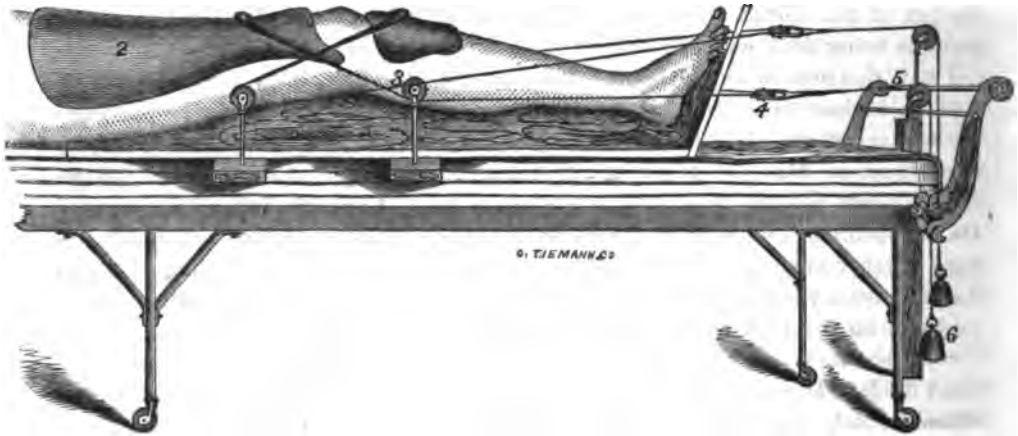
design. Mr. Lister does not trouble himself about the "oxidation of wounds," like M. Guerin, nor the "death of confined fluids," like M. Maisonneuve. His fundamental theory is that of germs,—that is to say, he, following the opinion of M. Pasteur, attributes to microscopic organic germs floating in the air all the fermentations and decompositions of contained fluids. To destroy these, he uses carbolic acid; he endeavors to render all his wounds "sub-carbolic wounds." This is another kind of occlusion, directed not against oxygen, but against the organic dust of the atmosphere.

IV. FRACTURES AND DISLOCATIONS.

Treatment of Fracture of the Patella.

Dr. J. H. HOBART BURGE, of Brooklyn, N. Y., proposes, in the *New York Medical Record*, April 15th, 1868, a new apparatus for the treatment of fractures of the patella.

FIG. 6.



If the fracture be simple, with but little swelling, bandaging will be unnecessary. The limb is to be placed on a straight splint of uniform width, well padded, and with a comfortable foot-piece. A substantial piece of sole leather, of suitable length and width to cover the anterior aspect of the thigh, should be nicely fitted by narrowing it toward the knee, and making its lower end concave to fit the upper border of the patella. Immerse it in cold water until it is thoroughly pliable, pad it on one side with batting, and cover with a cloth. Confine it to the limb by a bandage evenly applied. After a few hours it will be firm as a board. Then a small strong cord, stitched across the lower end of the splint (2), is passed through a pulley at a lower level (3), on either side of the limb, and made to complete the circuit by traversing a pulley (4) beyond the foot. Another cord passes over the wheel (5) at the foot of the bed, connecting the flying pulley (4) with the weight (6). The lower fragment may be dressed in a similar manner, as shown

in the engraving. When the leather splint has become dry and firm, the bandage which secures it may be replaced by strips tied or buckled around, outside of both upper and lower splint, thus leaving the circulation free in the sides of the limb. The lower splint may be hinged opposite the joint, to enable the surgeon to make passive motion without disturbing the dressings; in this case it must be supported by another board. The advantages of this apparatus are: 1st. It leaves the injured bone exposed to the observation of the surgeon. 2d. It grasps so firmly the quadriceps femoris together with the upper fragment of the bone, that it enables us to approximate the broken surfaces more completely than any other method. 3d. It is comfortable to the patient. 4th. It is inexpensive, simple, readily extemporized, and easily applied.

Treatment of Fracture of the Patella by Malgaigne's Hooks.

Two cases of fracture of the patella treated by Malgaigne's Hooks are recorded in the *Medical Times and Gazette*: in both, bony union took place.

Treatment of Dislocation of the Clavicle by Adhesive Strips.

We take pleasure in transcribing a method of treating that troublesome dislocation, the acromial end of the clavicle, proposed by Dr. D. W. CHEEVER, of Boston (*Boston Med. and Surg. Journal*, 1868). Three cases are reported where perfect success was obtained.

Two strips of adhesive plaster two inches in width and three feet in length, and a roller-bandage two inches in width and one inch in diameter, firmly rolled. The forearm is placed upon the chest, and the extremity of one strip of adhesive plaster was attached to it just below the elbow; the plaster is allowed to run up the outside of the arm to its upper third, and then gradually brought in front of the head of the humerus. On arriving at the top of the shoulder, traction is made upward to elevate the limb, and while thus elevated the plaster is allowed to run down the back. This strip keeps the shoulder elevated.

The extremity of the second strip is applied to the small of the back, and is allowed to run upward to the extremity of the clavicle, which is dislocated, and which is drawn upward by the trapezius. Then place the roller in the hollow behind the extremity of the clavicle, and allow the strip of plaster to run over the roller. Sufficient traction is now made to bring the clavicle downward and forward to its proper place, or, in other words, until all deformity is removed; this traction over the roller is maintained by allowing the plaster to run down the front of the thorax. The hand is to be supported in a sling.

Subluxation of the Body of the Sternum.

Dr. M. FORSTER, of Ontario County, New York, reports in the *American Journal of the Medical Sciences*, having successfully reduced a displacement of the lower end of the manubrium of over half an inch by throwing the head and shoulders backward, so as to draw the clavicles upward, and to produce tension of the pectoral muscles, so as to draw them outward, and then by repeated deep inspirations succeeded in forcing the manubrium upward and outward.

Dislocation of Shoulder-joint of Ninety-two Days' Standing.

Dr. J. M. BOISNOT, reports (*Medical and Surgical Reporter*, April 24th, 1868), an interesting case of this injury reduced by manipulation after ninety-two days' standing, the patient having at the time of the receipt of the injury, applied to a physician, who diagnosed the case as "a bad sprain," and treated it accordingly. The Doctor draws the very just conclusion, from this case, of the importance of careful diagnosis in cases of injury.

A Case of Lateral Dislocation Outward of the Elbow-Joint.

An example of this rare occurrence is reported by Assistant Surgeon J. A. FITZGERALD, U.S.A., in the *Western Journal of Medicine*, January, 1868, p. 17.

A man, forty-one years of age, was precipitated from his horse, while riding a race, and when seen twenty minutes subsequently, presented the following symptoms:

The forearm was slightly flexed and fixed; the ulna and radius were outlined to the eye on an outside view, the latter anterior to the former and abnormally separated, the ulna having been displaced outward and backward, the olecranon being more prominent than natural, and the coronoid process locked over the external condyle. The radius was thrown forward into the radial depression just above its articular surface, on the humeral extremity. The latter was very prominently projecting inward. The internal condyle and trochlear surface was apparent to both sight and touch beneath the integuments, while deeply behind the neck of the radius could be felt the external condyle. So great was the resulting deformity from this disposition of parts, that a fracture of the lower extremity of the humerus was suspected, but a closer examination revealed the contrary. It was evident that there was complete rupture of the orbicular ligament, as well as of the joint ligaments proper.

The luxation was easily reduced; and the limb was maintained flexed at nearly a right angle, by means of a felt splint and a roller. The resulting inflammatory action was slight; and the man removed the dressings on the tenth day. When seen three weeks after the accident, he had pretty good use of the joint.

Case of Dislocation of the Head of the Radius—Resection of the Joint.

We find recorded in the *Canada Medical Journal*, April, 1868, by Professor G. W. CAMPBELL, a case of dislocation of the radius forward, produced by a severe kick upon the arm while endeavoring to restrain a vicious horse.

The man, *set.* twenty-three, was admitted into the Montreal General Hospital, on the 9th of November, 1867.

The injury was received on the 18th of April 1867. After its reception the limb immediately fell powerless, and the elbow was stiff and could not be bent to a right angle. When first seen, the injury was mistaken for fracture at the middle of the forearm by the Doctor. The person after undergoing several weeks' treatment with splints, consulted another physician, who thought the elbow was ankylosed, and made forcible attempts at flexion and extension four times, at intervals of about one week.

When admitted into the hospital, Dr. Campbell correctly diagnosed the case, and for "various reasons, and especially the probable changes which had taken place in the joint owing to the active interference since the injury," determined to resect the joint, which he did by an H-shaped incision, December 1st. Wound entirely closed and free motion is daily made in all directions.

On the Reduction of Dislocations at the Hip-Joint by Manipulation.

Mr. HOLMES COOTE, surgeon to St. Bartholomew's Hospital (*British Medical Journal*, January 11th, 1868, p. 27), after bearing evidence as to the great superiority of manipulation over all other methods, in the reduction of dislocations of the head of the femur, remarks :

"There is but one primary dislocation of the femur at the hip-joint; namely, that in the foramen ovale, or downward and inward. There the capsule is weakened, and the rim of the acetabulum least prominent. When the whole limb is extended, all the ligaments are tense, and the direct abduction is a very limited movement. A person in the sitting posture may rotate and evert the limb to a much greater extent; but this is not the position in which a dislocation usually ensues. A heavy weight falling upon the hip may, and often does, drive the head of the bone through the inner surface of the capsule, producing a rent at the inner and posterior part, which must be sought for and found before the head of the bone can be replaced.

"The other forms of dislocation, namely, those on the dorsum ilii, the ischiatic notch, and on the pubes, are secondary, dependent either on muscular action or on the continuance of the dislocating force. The course of treatment is therefore obvious. Muscular rigidity having been overcome by the employment of chloroform, the head of the bone has to be worked down to the inner or the inner and posterior part of the capsule, where the rent will be found, and the replacement of the bone be effected. Muscular rigidity having been overcome by the use of chloroform, the leg should be bent at the knee and the thigh on the trunk, when, with a rotatory movement, the head of the femur may be easily made to retrace its course. Having succeeded in getting it at the inner aspect of the joint, the surgeon, with one movement, rotates the thigh outward and suddenly extends the limb, when the head of the bone slips into its socket with a snap."

For the demonstration of these points, Mr. Coote is indebted to Professor Fabin.

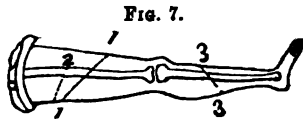
V. AMPUTATIONS AND RESECTIONS.

On a Modification of Flap in Amputations.

Dr. DUFF CHILD, Mobile, Alabama (*New Orleans Medical Journal*, April, 1868), says: All the advantages of the operation I wish to suggest are attained by the rectangular flap proposed by Mr. Teale, and I think by no other; but the performing of Mr. Teale's operation requires much closer calculation, and consequently more time and care than is necessary when the limb is severed by two strokes in a plane oblique to its diameter.

Having premised this much, I will now proceed to describe more particularly the operation I propose, and this cannot better be done than by the following figure:

In the figure (7), 1, 1, shows the line of incision for amputation of the thigh, the



division of the soft parts being made by cutting from without inward to the bone, or by transfixing the limb and cutting from below the femur, downward and backward, then forming a single and anterior flap by cutting from the bone upward and forward.

Before sawing the bone, the muscles should be separated from it by the point of the knife and the anterior flap be pulled well back, so that the point of section of the bone shall be very nearly on a line with the posterior border of the incision through the skin. (See 2, in Fig. 7.)

The stump resulting from the above-described procedure would appear thus (Fig. 8) if viewed from the side, and would, after healing, present a symmetrical and rounded trunk, covered at the end by a

Fig. 8.



thick layer of muscle and a sound surface of skin, the same points gained by Mr. Teale's operation, the cicatrix being equally as advantageously situated. I believe that the above-described form of flap will be found to be equally as good, if not

superior, to any other, whether single or double, not only because of the favorable position given by it to the cicatrix, but owing to the facility with which any discharge might escape from the wound, provided healing by first intention should not be secured. The operation is not quite as suitable for amputation of the leg as for the thigh, though I think it is as well adapted for that portion of the lower extremity as is any other flap operation. In fact, the cut surfaces by this method will fit to each other more accurately than they will when the flap amputation of Mr. Fergusson, as ordinarily performed, is employed; consequently, healing by first intention ought oftener to be obtained.

In forming the *single oblique flap* in the leg, it will be found that the skin over the front of the tibia has such a strong tendency to retract that it is necessary, in order to secure a sufficiency of integument, to dissect up this skin for an inch or more before transfixing the limb for the purpose of finishing the posterior part of the incision or flap. (Fig. 7,—3, 8.)

By taking this precaution, the bone can be sawn sufficiently short to allow the long posterior flap to be doubled over the tibia and attached without any difficulty. Owing to the adoption in surgical practice, during the last few years, of the use of metallic sutures, and the application to freshly cut surfaces of a solution of chloride of zinc and other preparations, all of which procedures seem to favor union by first intention, it is not impossible that flap amputations will come to supersede those by the circular method, because flaps can be so shaped as to fit each other very accurately, and therefore are more likely, by the aid of these measures, to heal by early adhesion.

I will add, that should the form of flap herein suggested be adopted in any case, it would be proper to use both the metallic suture and chloride of zinc solution in order to insure prompt healing, and, consequently, a well-shaped and serviceable stump.

Amputation of Thigh—Separation of Bone through the Epiphysis.

Dr. GEORGE BUCHANAN, A.M., Surgeon and Lecturer on Clinical Surgery, Glasgow Royal Infirmary, relates (*Glasgow Medical Journal*, April, 1868), the following case:

A boy, aged 10 years, whose leg was crushed by machinery up to the knee. Amputation by a long interior flap, through the condyles. One of the most perfect stumps I ever saw. The arteries were ligatured, and the wound healed with great rapidity.

I desire to draw attention to the mode of severing the bone. After I had cut through the soft parts, I drew the knife round the bone, to divide the periosteum where I intended to apply the saw, when I found that it passed into the soft cartilage separating the inferior epiphysis from the shaft. I laid aside the knife, and, by using gentle force, easily broke off the epiphysis, leaving the shaft with a rounded end, in which neither cancelli nor medullary cavity were exposed. This method of dividing the femur is so easy, and its result so perfect, that I would recommend its adoption in amputating at the lower part of the thigh in young patients.

Amputation at the Knee-Joint.

Within the past six months two elaborate essays on disarticulation at the knee-joint have appeared from the pens of American surgeons, one by Dr. THOMAS M. MARKOE, of New York (*New York Medical Journal*, March, 1868); the other by Dr. JOHN H. BRINTON, of Philadelphia (*American Journal of the Medical Sciences*, April, 1868). From these papers it would appear that this procedure is attended with less risk to life than amputation of the thigh, and that the resulting stump is admirably adapted for an artificial limb. The method preferred by both surgeons is that by a long anterior and a short posterior flap.

The mortality rate of the operation is shown in the accompanying tables, which embody all the cases analyzed by Drs. Markoe and Brinton, and which were prepared by the latter writer.

TABLE SHOWING THE RESULTS OF AMERICAN AMPUTATIONS AT THE KNEE-JOINT.

	Cases.	Recoveries.	Deaths.	Per cent. of Mortality.
Primary amputations after accident,	50	28	22	44.
Secondary amputations after accident,	31	18	13	42.
Secondary amputations for disease,	80	25	5	16.66
Cause and period of amputation undetermined, .	6	6		
Total,	117	77	40	34.19

TABLE SHOWING THE RESULTS IN THE AGGREGATE OF AMERICAN AND FOREIGN AMPUTATIONS AT THE KNEE-JOINT.

	Cases.	Recoveries.	Deaths.	Per cent. of Mortality.
Primary amputations after accident,	59	34	25	42.37
Secondary amputations after accident,	37	23	14	37.83
Secondary amputations for disease,	62	48	14	22.58
Cause and period of amputation undetermined, .	6	6		
Total,	164	111	53	32.31

Statistics of Amputations at the Pennsylvania Hospital.

The following is a *résumé* of a valuable paper contributed by Dr. GEORGE W. NORRIS, to the first volume of the *Pennsylvania Hospital Reports*, giving a *Statistical Account of the Cases of Amputation performed at the Pennsylvania Hospital from January 1st, 1850, to January 1st, 1860, with a General Summary of the Mortality following this operation in that Institution for thirty years.*

"From the above table it will be seen that from January, 1850, to January, 1860, there were 228 capital amputations performed. Of these, 173 were cured, and 55 died.

"Forty-three were of the thigh, seventy of the leg, eight of the feet, six at the shoulder-joint, thirty-eight of the arm, fifty-two of the forearm, eight at the wrist-joint, two of the hand, and one at the elbow-joint.

"One hundred and forty-six of the 228 operations were primary, being done for recent injuries within twenty-four hours after the occurrence of the accident, and of these 119 were cured, and 27 died; 42 were secondary, of which 27 were cured and 15 died; 40 were for the cure of chronic affections, of which 27 were cured and 13 died.

"Twenty-five of the whole number in the table were done at the joints, of which 23 were cured and 2 died.

"One hundred and seven of the amputations were of the upper extremity, of which 94 were cured and 13 died.

"One hundred and twenty-one were of the lower extremity, of which 85 were cured and 36 died.

"In adding the results furnished in the above ten years to those given in the volumes of the *American Journal* already referred to, for the twenty years previously, we arrive at the following results:

"Of 428 amputations upon 424 patients, performed during the thirty years from 1830 to 1860, 321 were cured and 103 died; of these, 261 were primary, of which 54 died; 83 were secondary, of which 31 died; 84 were for the cure of chronic diseases, of which 18 died.

"One hundred and ninety-four of the amputations were of the upper extremity, of which 21 died; 234 were of the lower extremity, of which 74 died; 46 were amputations at the joints, of which 6 died.

"One hundred and eighteen of the patients operated on were under 20 years of age, of whom 108 were cured and 10 died; 138 were between 20 and 30, of whom 101 were cured and 32 died; 87 were between 30 and 40, of whom 60 were cured

and 27 died ; 62 were between 40 and 50, of whom 40 were cured and 22 died ; 21 were upward of 50, of whom 16 were cured and 5 died."

Excision of the Entire Clavicle.

Dr. W. W. DAWSON, Surgeon to the Commercial Hospital, Cincinnati, narrates (*Cincinnati Lancet and Observer*, January, 1868, p. 1) the case of a youth, 20 years of age, from whom he removed the whole of the right clavicle, on account of necrosis following the kick of a gun. The acromio-clavicular articulation had perished, rendering the use of the knife unnecessary at that point. The line of incision was made over and upon the bone. The hemorrhage was trifling, and the wound had closed under the application of warm dressings at the expiration of forty-six days. The resulting deformity was slight, and consisted merely of slight depression of the shoulder. The cicatricial tissues were dense and firm, but sufficient time had not elapsed to observe the extent of the osteogenic properties of the periosteum, which was left behind. The use of the corresponding arm was complete.

Subperiosteal Resections of the Elbow.

By M. OLLIER, of Lyons (*London Lancet*, January 18th, 1868, p. 92).

"M. Ollier, who has attached his name to subperiosteal resections, has lately brought three cases before the Medical Society, in which he resected all the processes of bone entering into the articulation of the elbow. By very careful management, and minute care, the periosteum and tendons inserted into it were carefully preserved. The result in the three cases mentioned has been the complete regeneration of the joint, both as to form and movements."

Excision of the Wrist-Joint.

At the meeting of the Royal Medical and Chirurgical Society, March 10th (*British Medical Journal*, March 21st, 1868), when excision of the wrist formed the topic for discussion, Mr. J. W. HULKE narrated a case where he had successfully employed Lister's method of operating. The patient, a groom, had disease of the left wrist, of several months' duration. All other plans of treatment having failed, all the carpal bones, and the ends of the radius, ulna, and metacarpal bones, were removed, and the man recovered such a useful hand that he became a coachman and drove a brougham.

Mr. J. F. WEST, of Queen's Hospital, Birmingham, gave an account of three cases in which that operation had been performed with marked success. In the first and third, the whole of the bones entering into the formation of the joint were excised : in the second, a carious fragment of the radius, extending about an inch above the articulation, was alone removed. The patient recovered in each instance with a hand having considerable strength and mobility, after a variable period of time, extending from three months to two years. Mr. West insisted on the importance of free separation of the thumb from the rest of the hand during the treatment of the case, so as to counteract the tendency to inversion of the thumb which always follows the operation ; and further, the removal only of the parts diseased, and the early use of passive motion of the fingers.

Mr. HENRY LEE had excised a wrist-joint by the transverse incision, the flexor tendons being divided. The man recovered with a stiffish joint, but had some

power of flexion and extension, probably through the lumbricales muscles. The hand presented a good appearance.

Finally, Mr. CALLENDER stated that he had recently excised the wrist-joint in a case of strumous disease, and the patient died of pyæmia.

Resection of the Long Bones.

Dr. JOSEPH W. THOMPSON, of Paducah, Ky., in a report on this subject (published in the *New York Medical Record*, March 16th, 1868), gives eight cases of resection, interesting from the fact that results are given after a considerable lapse of time.

CASE I. Femur, middle third; shortening, 4½ inches. Operation on the battle-field; six months in hospital. Treatment, position and water dressing. Two years after the operation has good use of the limb.

CASE II. Fibula; six or seven inches resected on the field. Removed to hospital. Treatment, water dressings. Result, recovery, with good use of limb.

CASE III. Humerus, lower third; two inches resected. Result, recovery, with good use of the arm; by his own statement, doing duty as a steamboat engineer, nearly as well as ever.

CASE IV. Shoulder-joint; 3 inches of upper end of humerus removed. Operation on battle-field. Result, recovery. Three years after operation, can do light work, the end of the humerus resting in an artificial cavity, just underneath the edge of pectoralis major muscle.

CASE V. Humerus, upper and middle thirds; three inches removed. Result, recovery, with considerable use of the arm.

CASE VI. Femur, upper third; two and a half inches removed. Result, the ends of the bone united well, and the limb of great use to him.

CASE VII. Radius and ulna; three inches of both bones removed. Result, no bony union, and but little, if any use.

CASE VIII. Humerus, upper and middle thirds; four inches removed. Result, recovery, with no shortening, the space between the two ends of the bone being filled up with a fine cartilage-like substance; can lift weights in a line with his body, but cannot carry the hand to his head.

VI. TOPOGRAPHICAL SURGERY.

(a.) HEAD, NECK, AND BREAST.

Extraordinary Recovery after severe Injury of the Head.

A very remarkable instance of recovery from severe injury of the brain is recorded in the *Western Journal of Medicine*, March, 1868, p. 151, by Drs. JEWETT and INMAN, of Middleburg, Ohio. A man, twenty-seven years of age, while engaged in blasting coal, was struck by the blasting pipe, four feet in length by five-eighths of an inch in diameter, which entered the skull near the outer angle of the right superciliary ridge, breaking down the supra orbital plate, protruding the

eye considerably, passed through the right anterior lobe of the brain, lacerating the longitudinal sinus, traversed the left middle lobe, and emerged from the skull at a point about an inch and a half above and behind the left ear. The rod lodged after having entered one-half of its length, and was extracted at once by his companions, not, however, without considerable difficulty and force, owing to a bend in the portion of the rod in his skull.

For several days he lay in a state of profound coma, without marked paralysis. On the twelfth day he began to show signs of consciousness, after which he gradually improved, and eight weeks after the reception of the injury he was able to leave his bed. The treatment throughout was sustaining, with cold to the head, and attention to the bowels. Fragments of skull, coagulated blood, and brain-substance were freely discharged from time to time. Upwards of eight months after the injury he appeared to be perfectly rational, and replied correctly in monosyllables, but was unable to connect words.

Cancer of the Calvaria.

In the reports of the New York Pathological Society (*The Medical Record*, February 15th, 1868), Dr. Loomis describes a case of cancer of the calvaria in a German woman, æt. 48, who died on the 4th of November last. There were noticed, as symptoms, slight pains (which at first were regarded rheumatic) in the muscles of the back and shoulder, puffiness about the face, partial loss of power in the left hand, and the left leg was found to have lost sensation, and had its temperature decreased. She grew gradually worse, and sunk 48 hours after she was first seen. The paralysis had extended to the right leg and other parts of the body before death.

The autopsy revealed ossification of the coronary artery, hypertrophy of the left ventricle, and atheromatous deposits in the aorta and on the surface of the aortic valves. There was found in the occipital bone, parietal bones, and right side of the skull, a mottled deposit of a new material, some of which was of a cartilaginous hardness, some of muscular consistency, and some as soft as jelly.

The microscopical characters of the bone were: fibrous bands crossing polygonal-shaped cells, from the $\frac{1}{16}$ to $\frac{1}{8}$ of an inch in diameter, with nuclei and nucleoli. These cells were granular, and there were free nuclei everywhere present.

Trephining.

Mr. MARSHALL, of University College Hospital, London, narrates (*British Medical Journal*, Jan. 11th, 1868), the case of a man, forty years of age, who suffered from an extensive scalp wound, inflicted by the fire-box of a railway engine in motion. There were temporary symptoms of concussion, and on the eighth day there appeared signs of slight compression and pyæmia. On the following day the trephine was applied over a portion of necrosed bone, of the size of a florin. On perforating the bone, pus welled up alongside of the instrument, and a drachm and a half of the same fluid escaped on its removal. The dura mater was uninjured, but it began to slough on the next day, when the man expired. There were post-mortem evidences of limited pachymeningitis; the longitudinal sinus was occupied by pus and broken-down, mottled coagula; there were patches of

lymph and pus on the arachnoid; the surfaces of the hemispheres were incrustated with lymph, and several small abscesses occupied the lungs.

Dr. C. M. CLARK, of Chicago (*Chicago Med. Jour.*, March 15th, 1868), trephined a man on account of paraplegia following a slight gunshot depression of the fronto-parietal region of the skull. The paralysis began four months and a half after the reception of the injury, and had continued up to the date of the operation, three years later. At the expiration of five weeks, when the patient returned to his home, the relief was complete.

Professor J. C. HUGHES, of the University of Iowa (*Iowa Med. Jour.*, January and April, 1868), reports the case of a man, thirty-seven years of age, who had received a blow over the supra-orbital region. There were slight symptoms of concussion, and three weeks subsequently marked signs of compression set in. A large circle of bone was removed from just above the seat of the injury, from the inner surface of which a spicula had been depressed upon the dura mater, without involvement of the outer table. An incision was also made upon the dura mater, for the purpose of giving vent to some pus. The man at once regained his senses, and recovery was rapid.

Removal of a Large Osteo-Sarcoma of the Lower Jaw.

By Mr. CHRISTOPHER HEATH, of University College Hospital (*Canada Medical Journal*, December, 1867, p. 264).

The patient was a man aged thirty-two, in whom an enlargement of the lower jaw commenced eight years ago, after the extraction of a tooth. It remained more or less stationary up to two years ago, when he fell from a horse and injured himself; from that time it grew pretty rapidly, and now was as big as an adult's head. The man, who was from Leicester, had been seen by several surgeons, all of whom refused to operate. Mr. Heath, who has already made himself famous for operations on the jaws, considered it a suitable case for surgical interference, and the man was admitted under his care. It so encroached on the mouth that the tongue could not be seen, and there was much difficulty in feeding himself. The patient presented a most extraordinary appearance, from the immense size of the tumor, which had in front of it a fungoid-looking mass, which was not malignant disease, but the result of some quack treatment he had undergone. Chloroform was given at the nose, the patient sitting in a chair with his legs tied to it. When under the influence of the anæsthetic, Mr. Heath made an incision on either side of the central fungoid mass, cutting through the lip and dissected off the skin. He sawed through the angle of the jaw on the left side, where it was comparatively free from disease, and then carefully detached all the surrounding structures, until he reached the articulation on the right side, when with a little care he succeeded in getting away the condyle. The tongue, early in the operation, was transfixed with thick cord, and was held out by Sir Henry Thompson. Comparatively little bleeding ensued, but several small vessels were tied. The lip and chin were brought together by pins, and the flaps by silver wire sutures; and it was astonishing to witness the improvement in the man's features. The great tumor was the size of an adult's head, and weighed four and a half pounds; it was not malignant, and for the most part was bony. Although the patient was weak, chiefly from the

want of food, he seemed to be in good condition after the operation, and there is no reason why a favorable issue should not ensue, of course excepting the usual surgical accidents.

Case of Laryngotomy.

The following case of laryngotomy is reported in the *Boston Med. and Surg. Journal*, February, 1868, by WILLIAM B. REYNOLDS, Post Surgeon, St. Augustine, Fla.

A soldier was brought into the Division Hospital, in front of Petersburg, wounded in the neck. The ball entered just in front of the sterno-cleido-mastoid muscle upon the right side, and passed directly across. It cut its way through the right side of the larynx, just below the thyroid cartilage, and, penetrating the left wall, was lodged there. Soon after receiving the wound he was brought to the hospital, and the diagnosis was readily made. Dr. J. D. Lyman, without administering chloroform, proceeded to operate. He cut down upon the ball, and at the moment of grasping it with the forceps, it slipped backward and passed down the trachea. The patient at once was seized with all the symptoms of immediate suffocation. The face became purple, and the veins of the neck stood out like whip-cords, and, with the gasping, spasmodic breathing, gave evidence that there must be immediate relief or death. Enlarging the opening, he introduced a pair of forceps, and succeeded in grasping the ball at the bifurcation of the trachea.

Removal of Cancerous Breast.

We glean from the Paris correspondence of the *Leavenworth Medical Herald*, May, 1868, that Dr. SIMS lately performed a surgical operation of unusual interest, in which he made use of the nitrous-oxide gas. The patient was a lady of about 60 years of age, rather stout, and slightly of the lymphatic temperament. In about two minutes from the time she commenced breathing the gas she was in a profound anæsthetic sleep. She was kept insensible for *sixteen consecutive minutes*, till the operation was finished and the dressing nearly completed. In less than one minute from the time she ceased to breathe the gas she returned to perfect consciousness, having, as she stated, experienced no pain from the operation. There was no nausea, sickness, or vomiting. There was one remarkable feature connected with the use of the gas: after the patient was first made insensible she was allowed to breathe some air with the gas, and was thus returned to *semi-consciousness*, and continued in this condition during the entire operation. She felt no pain, but could see and recognize persons standing around.

(b.) EYE AND EAR.

Obstruction of Lachrymal Duct.

Dr. JOHN GREEN, of St. Louis, in the *St. Louis Medical and Surgical Journal*, in an article "On the Modern Treatment of Lachrymal Obstruction by Dilatation of the Natural Passages," says:

"In the present state of knowledge it may be safely laid down as a principle that in very few cases, either of stricture of the nasal duct or of inflammation of the lachrymal sac, is it necessary or advisable to open the sac in the old method by a puncture through the skin. If we have to deal with an acute abscess of the

lachrymal sac it is quite possible in many cases to give vent to the pus by means of a slender grooved probe, passed into the sac by the way of the upper or lower punctum; and if this simple manœuvre fails, the punctum, or even the whole length of the canaliculus may be slit up, either with fine scissors or by a narrow-pointed knife, guided upon the groove of a fine director, so as to open a free communication between the cavity of the lachrymal sac and the sac of the conjunctiva. The writer then states that he does not deem the latter procedure absolutely indicated, for it is an undoubted fact in the majority of cases that the fluid contents of the sac can be sufficiently evacuated through the canaliculi and puncta, if only these parts are so far unobstructed as to admit of the passage of the small grooved probe already referred to.

"The history of the operations for removing obstructions of the nasal duct is then traced by Dr. Green. Anal in 1713 used probes for this purpose. Mr. Travers, London, 1820, advised probes of about five inches long, varying in size, flattened at one end and slightly bulbous at the point. Dr. Isaac Hays, of Philadelphia, has followed the method of Mr. Travers, passing the probe throughout the whole extent of the lachrymal passages, from the punctum to the nostril.

"*Styles*, nail-headed, made of gold and silver, were used by Mr. Ware, of London, 1798. They were introduced through an opening made in the skin, immediately below the tendon of the orbicularis. They are designed to be worn many months, or even permanently, the tears finding their way readily by the side of the style into the nostril.

"Scarpa and Beer employed soft bougies in the dilatation of the nasal duct, but always through an artificial external opening. Mr. Bowman dispelled the fear of passing anything but the smallest probes through the lachrymal puncta, by his demonstration of the physiological action of the part. In 1851 Mr. B. described a new operation for epiphora, in cases of eversion of the puncta, by slitting open the punctum and the wall of a part of the canaliculus as far as the caruncle. This suggested to Mr. Bowman that by a similar slitting of the punctum a ready way may be opened for the further exploration of the lachrymal passages, and even for the dilatation of strictures of the nasal duct. Following this line of research, Mr. Bowman devised the improved plan for the treatment of lachrymal obstructions, which has been very generally adopted, and which is everywhere known by his name.

"The method of Mr. Bowman consists essentially in the repeated dilatation of the natural passages by means of metallic probes of regularly increasing diameter, introduced through one of the puncta, previously enlarged by slitting it up a little way toward the caruncle.

"These probes are of six sizes, varying from the minute and almost capillary probes to a diameter of 1-20th of an inch. The fundamental principle upon which this method is based is contained in the anatomical fact that the canaliculi are somewhat capacious ducts, capable of giving passage to probes of about 1-20th of an inch, which Mr. Bowman showed to be sufficient for the dilatation of all ordinary strictures of the nasal duct.

"The upper or lower punctum, and about 1-12th of an inch in length of the canaliculus, are first laid open by a fine scissors, or by a knife and a grooved probe (or a probe-pointed knife), so as immediately to admit a sound of the full diameter of the duct. Any obstructions are carefully explored, and their dilatation gradually accomplished by means of the different-sized probes. . . . In the different methods that have been noticed, the size of the largest probe is necessarily

limited to the diameter of the slightly stretched canaliculus. Many surgeons have adopted the plan of slitting up the entire length of the canaliculus into the lachrymal sac, thus converting that duct into an open groove, leading to a large artificial communication between the conjunctival and the lachrymal sacs.

"Weber, of Berlin, advises the use of elastic sounds and conical wax bougies, having a maximum diameter at the largest point equal to four mm. (16-inch).

"Dr. E. Williams, of Cincinnati, treats all obstructions of the nasal duct by styles, of increasing size, introduced through a free opening made by dividing the upper canaliculus, which are worn during a period of several weeks. Local medication of the sac by means of solution of zinc or copper salts, which can be very readily injected by any small syringe. . . . Dr. Green prefers, with Mr. Bowman, slightly to enlarge the entrance into the canaliculi by a small incision. This incision should be restricted to a length of a twelfth or a sixteenth of an inch."

Refractive and Accommodative Power of Lens.

Dr. SAMUEL COLE, writing from Vienna to the *Chicago Medical Journal*, May 15th, 1868, says:

Selecting from many interesting things, I may mention two applications of optics to practical ophthalmology, one consisting of an easy method of expressing the various degrees of refractive and accommodative power by the size of angles, instead of the inverse value of their focal distances (*i. e.*, 1 divided by the focal distance of the lens). This method renders the calculation much simpler, by substituting integral for fractional numbers. On the other hand, it appears less convenient for practical purposes, since the degree of hyperopia or myopia is expressed in a way different from that of the visual distance of the eye. To render this clearer, I must resort to an illustration. If a ray of light coming from a luminous point fall upon a lens at a certain point above its axis, the refractive power of this lens may be measured by the angle of deviation which the refracted ray undergoes. The higher the refractive power of the lens, the greater will be the angle of deviation. Mr. Steinheil found by calculation that for a given and very small *height of incidence* (distance of the point of incidence from the axis), the angles of deviation for different lenses, the luminous points remaining stationary, are as follows:

REFRACTIVE POWER OF LENS EXPRESSED.

By angle of deviation, in seconds.	By focal distance, in inches.	By angle of deviation, in seconds.	By focal distance, in inches.
1	120.	15	8.
2	60.	20	6.
3	40.	24	5.
4	30.	30	4.
5	24.	40	3.
6	30.	48	2.5
7	17.14	50	2.4
8	15.	60	2.
9	13.33	80	1.5
10	12.	100	1.2
11	10.91	120	1.
12	10.		

By this table you will perceive that the refractive power of a lens of $\frac{1}{125}$ is equal to an angle of deviation of $1''$; consequently an augmentation of refractive power of $\frac{1}{125}$ increases the size of the angle of deviation by $1''$. If, for instance, a short-sighted person can see plainly at eight inches distance, modern ophthalmologists say that the grade of his myopia is $\frac{1}{8}$. According to Mr. Steinheil, we would say that is equivalent to an angle of deviation of $15''$. The method in use expresses the visual distance and the degree of myopia in the same manner, whilst Steinheil's has the inconvenience that the degree of myopia is expressed by an angle, the visual distance being, of necessity, expressed by its length.

Historical Note on Hypermetropia and Astigmatism.

Dr. A. NAGEL, of Tübingen (*Arch. für Ophthalmologie*, xii, I), (*Royal London Ophthalmic Hospital Reports*, vol. vi, part ii, April, 1868), quotes from a German translation of Janin's *Memoires et Observations sur L'Œil* (Paris, 1772), a complete description of a case of extreme hypermetropia, and a full recognition of the state of refraction to which the symptoms were due.

He quotes also from an inaugural dissertation, by G. H. Gerson, published at Göttingen in 1810, an account of a case of myopic astigmatism, with a reference of the phenomena to the different curvatures of the chief meridians of the cornea. He therefore claims for Janin the discovery of hypermetropia, and for Gerson a place between Young and Airy in the history of astigmatism.

Case of Chronic Ophthalmia, apparently Incurable, but ending in perfect Recovery.

GEO. McMILLER, Assistant Surgeon U. S. A., reports as follows in *Leavenworth Medical Herald*, April, 1868:

Near the beginning of August, 1867, a colored soldier applied to me, laboring under chronic ophthalmia. He stated that he had been suffering from the disease between two and three months, and had been previously under treatment. Right eye alone affected, left quite sound. He stated that he could see very little. The conjunctiva was much injected and thickened, but not at all granular. The cornea was opaque, having the dull appearance of ground glass, and was evidently thickened by interstitial fibrinous deposits.

Treatment.—Blisters to back of ear, and to the trachea; laxatives of magnesia sulphas; bathing eye in cold spring water; a solution of *argenti nitras* to be dropped into eye (strength of solution not stated). Four applications were made. In one week, inflammation more intense, and vision extinct, as stated by patient. Nitrate of silver discontinued, and the treatment persisted in. Generous diet. In two months nothing remained but a small opaque spot at the centre of the cornea. In three months vision was completely restored.

Remarks.—The great point is to make a few applications of nitrate of silver, and then to trust the case to blisters.

Inflammation of the Globe of the Eye and Ocular Capsule, following Accouchement,

In the Boston City Hospital, service of Dr. H. W. WILLIAMS (*Medical and Surgical Journal*, February 27th, 1868), reported by Dr. Wadsworth.

Mrs. —, æt. thirty, was attacked two weeks after confinement, with intense pain in and about the left eye, accompanied with much tumefaction of the tissues of the orbit and lids. When first seen, about a fortnight later, the pain and swelling were in part relieved. But the effect of the previous distension was still evident in the flabby condition of the skin of the lids. The conjunctiva was thickened and highly vascular; abundant muco-purulent secretion. There was also a purulent secretion under the conjunctiva, which had probably made its way forward from the posterior part of the fibrous capsule in which the eye revolves. Vision was entirely extinct; interior of the globe showed deep-seated opacity, resembling that sometimes observed in cases of cerebro-spinal meningitis. This opacity, seemingly due to an effusion of morbid products upon the choroid and retina, extended itself through the vitreous, nearly to the lens, and along the posterior surface of the iris to the pupillary margin, causing adhesions to the anterior surface of the crystalline. Treatment followed not accurately known. Only palliative treatment would now be of any avail.

Retinitis Pigmentosa and Register of Field of Vision.

B. JOY JEFFRIES, M.D., reports several cases of this disease in the *Boston Medical and Surgical Journal*, April 30th, 1868.

R. W. B—, aged nineteen, Massachusetts, has been from childhood more or less amblyopic, and especially suffered from night-blindness. His power of vision has decreased as he has grown older, so that he follows the occupation of a shoemaker with difficulty. General health, bodily development, and intellectual faculties good.

April 6th, 1867. His vision is for distance—right eye $\frac{1}{2}$, left eye reads 200 at seven feet. For the near, he reads Jäger 4 at seven inches with right eye, and makes out Jäger 13 with left eye. With convex glass $\frac{1}{10}$ th, he reads Jäger 1, being perfect vision. Ophthalmoscopic examination showed the disease to be retinitis pigmentosa in its most characteristic form. The mother had good eyes; she died nine years ago. The father, aged sixty, still lives, having good eyes. They were not blood relations. Patient has three brothers and three sisters. The oldest brother, aged thirty-six, has very poor vision; cannot work. One sister, aged twenty-five, married, has poor eyes, but not so bad as the eldest brother. No record of aunts or uncles. Field of vision was reduced to irregular outline about five inches in diameter, at 12 inches distant.

J. H. R—, Charlestown, Massachusetts, morocco dresser, hair red; aged twenty-five; Irish parentage; a healthy-looking, well-developed, and intelligent man. Has been troubled somewhat from want of action of the bowels. Never had syphilis; has now some inflammation, chronic, of the Meibomian follicles. Served in the navy during the rebellion, and was once struck over left eye by a rammer, which produced no permanent injury. Externally, there was only the movement of the eyes, so characteristic of the disease, to be noticed. His eyes have troubled him as long as he can remember, and his vision gradually became poor, night-blindness being a marked symptom, and on this account was relieved, while on board ship during the blockade of Charleston, from duty requiring good eyesight.

October 29th, 1867. Has vision for distance with $\frac{1}{1}$ th— $\frac{2}{3}$ th; for the near, he reads Jäger 1 at eight inches with each eye, being perfect vision. Ophthalmoscopic examination showed a typical case of retinitis pigmentosa. Each optic

papilla had a conus round it, with defined border, showing perhaps, congenital myopia, as also shown by improved vision for distance with $\frac{1}{11}$ th and reading Jäger 1 at eight inches.

From the patient himself, and through him from an aunt, I learned that his parents were not blood relations. He had five brothers, born in the old country, now dead, their vision said to be good. One sister, living and working in this country, whose eyesight is not good or perfect. The field of vision was very much reduced, preventing him from working at his trade, more than corresponding to the deposit of pigment, being equal to but one inch in diameter at twelve inches distant.

R. S., farmer, Cromwell, Conn. Hair red; aged 33. A sufficiently intelligent, well-developed, healthy-looking man. Complains that his vision never was so good as other people's; when 21 years old, had "lung fever," and sight afterwards poorer, "less strong." Patient has now some degree of photophobia; nothing externally seen but the peculiar movement of the eyes generally noticed. Three or four years ago he could read, and during the rebellion was not exempted from the draft on account of his eyesight. Now, November, 16th, 1867, vision is reduced to counting fingers and being able to grope about.

Ophthalmoscopic examination showed retinitis pigmentosa, viz., abundant deposit of pigment over retina, especially left eye; optic papillæ encroached upon by retina; vitreous rather cloudy and floating opacities: delicate, web-like deposit on both posterior capsules.

The parents were not blood relatives. The mother's brother had gradually lost his sight before 45 years of age. Patient's five sisters all have good sight. One brother has become gradually nearly blind at 44 years. Patient says the mother is "near-sighted," aged 67; "sees things near to, but not at a distance." As respects treatment, readily comprehended that it can be of little service in a disease progressing to atrophy of the optic nerve and the perceptive elements of the retina; and must be limited to allaying irritation by local removal of blood from the temple, and the administration of medicines adapted to any existing derangement of the system. The removal of the orange-colored light by wearing cobalt-blue tinted glasses, which shall also be adapted to correct any myopia, etc., is of course to be included.

At times, seemingly brilliant results have been obtained by the more powerful alteratives, such as iodide of potassium, corrosive sublimate, and decoct. Littmanni. This benefit was, however, but temporary, and the patient in reality, worse off, as vision seemed afterwards to diminish more rapidly. It would appear that any drug which hastens change of tissue can be but prejudicial where that change is but atrophy.

This disease is not a very uncommon one. Its average occurrence we cannot give precisely, but Dr. Morren had 82 cases in ten years in the clinic at Dusseldorf among 32,000 cases of all diseases of the eyes. Were it looked for in the amblyopic or blind, it would no doubt be oftener recognized. The ophthalmoscope first showed us the proximate cause of the affection; and we cannot but recall with a shudder the old days before its invention, when retinitis pigmentosa was, like many other intra-ocular diseases, called amaurosis, and treated by more powerful remedies, as it seemed to prove more and more stubborn. At present we cannot cure, but we can, to some extent, retard the progress of the malady, and forewarn the unfortunate patient of the coming blindness.

Since special attention has been called to the importance of examining the field of vision in a large class of diseases of the retina, and also in cerebral trouble, the necessity of being able to make the examination quickly and record it expeditiously and permanently, has led me to adopt the following method, which I have found so ready and useful that I am induced to bring it to the attention of the Society.

I make my examination in the usual way, letting the patient sit down in a chair and lean against the back, so as to keep the head more steady. The blackboard, about 4 feet by 3 feet, I place exactly one foot in front of the eye. Covering the eye not to be tested, and directing the patient to continue to look steadily at a small cross, a pencil of chalk is approached in various directions, and, when seen, the spot marked on the board. Connecting these dots together, we have the periphery of the field of vision, and can in like manner examine the central portion.

Now, in order to have a permanent record of the case; I place over the blackboard a light frame, across which, in both directions, fine white pack-thread is stretched at every three inches. The threads lie against the board, and we thus have it divided up into squares. Care is taken, of course, that the central cross at which the patient looks shall correspond to the meeting of two threads. Then on my "Register of the Field of Vision," which is reduced to one-twelfth, and the squares of which are therefore one-fourth of an inch, I draw the outline of the field of vision, copying the line in each square from the blackboard. This gives me a field corresponding to the eye at one inch from the paper, being one-twelfth of the distance of the patient's eye from the blackboard. There are two registers printed, one for each eye. On the other side of the sheet we can write the necessary data in the case. If need be, we can transfer our result back again to the blackboard. The plates of the field of vision, hitherto used in reports of cases published, give us in reality only the shape of the outline, and perhaps, by shading, some idea of the relative amount of vision of different parts. In my method we have the true size of the field, and should we desire to have the cause illustrated, the artist has a positive size to go by, which I have adapted to an octavo volume. The examination and record in an ordinary case will not thus take more than fifteen minutes. The registers are $2\frac{1}{2}$ by $3\frac{1}{2}$ inches, corresponding to a $2\frac{1}{2}$ by $3\frac{1}{2}$ feet blackboard. Cases in which we examine the field of vision may last weeks or months, and by this easily adopted method we can, by referring to our various records on the register, see what change has taken place, and thus often give definite prognosis or have positive indication for treatment.*

Etiology of Glaucoma.

Dr. ADAMINK, Assistant in the Ophthalmic Clinic of the University of Cazan, Russia (*Annal d'Oculistique*, July and August, 1867, page 1; *Royal London Ophthalmic Hospital Reports*, vol. vi, part ii, April, 1868), believes that he has made an important advance toward a correct knowledge of the stages which constitute the glaucomatous process. He thinks that it is in alterations of the intra-ocular circulation that we must find the explanation hitherto vainly sought in other directions. "We must admit," he writes, "that increase of tension is not the essential

* This is printed in the American Edition of Stellwag on the Eye.—B. J. J.

cause of glaucoma. It is much more reasonable, on the contrary, to suppose that the increase of tension is in itself the result of the peculiar distribution of blood." Thus he refers the first change in tension to impediments offered by the sclerotic to the escape of venous blood; and argues that when once increase of tension has been induced it can never disappear, but will tend (by pressure on the veins) to augment itself. Hence he infers the importance of a temporary relief by iridectomy or paracentesis, which may allow the veins an opportunity for emptying themselves. He explains the different degrees of glaucoma by suggesting that in some only the retinal veins are implicated, in others the posterior choroidal, and in the most acute cases all the choroidal as far upward as the ciliary body.

He details the results of experiments in which the eye was separated from the external tissues, its arteries being as much as possible left intact, and ligatures being placed on its veins (*venæ vorticosæ*).

In these, the tension of the globe is found to increase quite up to that of complete glaucoma, but the changes in the retinal circulation do not show themselves, so long as the retinal veins are not interfered with. The fact that the chief symptoms of glaucoma (distended veins, shrunken arteries, and increased tension of globe) can be produced by irritation to the ciliary region of the cervical cord, is mentioned as another proof that they depend on alterations in blood supply. The one weak point in Dr. Adamink's theory seems to be as to how the sclerotic is so altered as to impede the exit of blood. He speaks of loss of elasticity of the sclerotic, of thinning of it, and the opposite state or thickening, as conditions capable of effecting this result.

But surely it is mere conjecture that any such conditions are present in glaucoma.

Tobacco Amaurosis.

The *Medico-Chirurgical Transactions*, vol. i, 1867, and *Royal London Ophthalmic Hospital Reports*, vol. vi, part ii, April, 1868, contain a statistical paper by Mr. HUTCHINSON, embracing a three years' experience of the form of amaurosis supposed to be in connection with tobacco. The author carefully distinguishes between cases of secondary atrophy preceded by neuritis, and those in which the atrophy is primary (at least so far as the optic disc is concerned). The latter only are the cases tabulated. It is estimated that a hundred cases of this kind are admitted at the Moorfields Hospital every year. The chief fact brought out is the comparative rarity of the disease in women. In a former report on this subject, Mr. Hutchinson had found the proportion to be three women to thirty-seven men, and in the present one we have thirty-four men to only three women. Almost all the men had been heavy smokers, and in a large majority of the cases no other cause could with any plausibility be assigned. In most of the cases there was little or no evidence of disease of the nervous system other than the amaurosis, the patients usually remaining in excellent health. Mr. Hutchinson discusses in some detail the other possible causes of disease which may be supposed to bear unequally upon the two sexes, and is unable to suggest anything more plausible than the tobacco hypothesis. Whilst avoiding the expression of any definite opinion, he yet urges that the evidence is quite sufficiently strong to make it an important duty, on the part of the surgeon, to advise abstinence whenever the early symptoms of this disease are present. He explains the general immunity of smokers, by supposing that tobacco only acts prejudicially in certain peculiar constitutions,

just as we know that some persons are easily poisoned by iodide of potassium, belladonna, arsenic, etc.

Severe Brain Disease with Double Optic Neuritis.

Dr. HUGHLINGS JACKSON says of a case under his care at the London Hospital (*London Medical Times and Gazette*, April 11th, 1868):

"In the following case, from the condition of the optic discs, and from the history of severe pain in the head and convulsions, there was, to my mind, no doubt that there was extensive disease within the head, a tumor, or coarse disease of some sort. I have now made many post-mortem examinations in support of the conclusion that optic neuritis is nearly always associated with *coarse* disease. . . . The fact that a patient gets into robust general health after even an acute illness, in which he has severe pain in the head, optic neuritis, and convulsion, does not negative the diagnosis of coarse disease, such as a tumor. I have recorded the case of a boy who got well (excepting for impaired sight from optic neuritis), for a time after such symptoms.—*London Ophthalmic Hospital Reports*, vol. vi, part iv.

In the next number of that journal I recorded his death from large intra-cranial cancer. Last year I had under my care in the hospital a boy whose symptoms were closely like those of W. G., now to be reported. He had a deceptive memory, but died, and a large hydatid cyst was found in the left cerebral hemisphere. Wherever there is optic neuritis, or atrophy after it, the patient's case is to be seriously considered. He is liable to new symptoms, and especially to certain convulsive attacks which begin in one hand, one side of the face, or in one foot.

CASE. W. G., aged 17, December 16th, 1867.—A boy, stunted probably from early rickets. He had a large head, but it had always been so. He had been ill twelve months, but he had never been strong. During the whole twelve months he had severe pain in the head. He had lost sight eight weeks; of the left eye first. Nine months ago he began to suffer with fits. He had about one a month till two months ago, when he had three in a fortnight, and they "took his sight away." He had no warning of them. It is said that they affected the right side of his face and his right hand chiefly; he became insensible; his tongue was not bitten, and there was no foam after the last; he slept all day.

When I saw him he was quite blind. He was weak in both legs, but the right seemed the weaker, but the difference was slight. The right arm was very slightly affected. His speech was a little odd, *e.g.*, saying "lee" for little. Still the defect was so very trifling that scarcely any importance could be attached to it. His mother said, however, that his speech was a little different. He still suffered from pain in the head, but he had no fit since those three weeks ago.

His sense of smell was probably not impaired. He seemed too dull a boy to make accurate observations on. He said peppermint smelled of lemon.

Both optic discs white and slightly bluish. The veins were not enlarged, but the arteries were very small; the border of the disc was not much pigmented, and it was a little ill-defined. From the look of the discs I should say they had been inflamed more than six weeks. They were in what I should call the second stage of optic neuritis, a stage which much resembles what is called the swollen disc.

It is most important not to conclude that the ophthalmoscopic changes we first see are the first changes. The only way to avoid mistakes is to watch many cases of severe optic neuritis in their gradual progress to optic atrophy.

I gave him iodide of potassium, ten grains, three times a day.

March 2d. His appetite was good, and he slept well at night, and walked about the ward. He soon got free from all the symptoms except the blindness, which will be permanent, and has gone out.

I still think that he has extensive disease within his head, probably of the left cerebral hemisphere; it does not involve the motor tract, or there would be decided hemiplegia. The disease is above the ventricle, as both sides are weak, although one more than the other; and the disease there seated must be extensive, since small disease of the cerebral hemisphere, away from the motor tract, does not cause any local paralysis—I mean does not cause paralysis by the amount of nerve-tissue it destroys. Limited abscess in the cerebral hemisphere, for instance a small abscess, is not unfrequently attended by epileptic hemiplegia; but in such cases the palsy cannot depend directly on the gross disease, *e.g.*, on the small abscess. The boy's palsy may have followed a convulsion due to small disease of the hemisphere; but if so the arm would probably have suffered more, and both legs would not have been weak. The fact that the palsy passed off does not negative the idea that it was caused by *destruction* of nerve-tissue; for we know that hemiplegia occurring from the destruction of part of the corpus striatum by a clot will pass off. I do not lose sight of the possibility that there may be disease of one cerebellar hemisphere. In these cases, I suppose from the pressure the disease involving the cerebellum makes on other parts, both legs are often weak, but the weakness varies, often comes on and passes off suddenly, and there are frequent local palsies of cranial nerves.

Tumor of the Orbit and Brain.

Prof. V. GRAEFE (*Arch. für O.*, xii, 2; *Royal London Ophthalmic Hospital Reports*, vi, part 2, April, 1868), says:

The subject of this case was a girl, six years old, a native of Aleppo, brought to the professor in the autumn of 1864, on account of protrusion of the left eye. Early in her third year she fell and struck her head severely on a staircase, and four weeks later suffered from feverish illness, which lasted fourteen days, and terminated in apparent recovery; but was soon followed by some deviation outward of the left eye. By her fourth year the squinting eyeball began to project, and for six months its vision had gradually failed. The child had been free from pain and intellectual disturbance. When seen by Von Graefe she was of remarkable beauty, with blooming complexion and elastic skin, well-developed muscles, and good spirits. Careful inquiry failed to discover any symptoms of disordered health. The right eye was perfect, and the only discoverable disorder was the protrusion of the left. This protrusion measured eight lines; and especially during the last few weeks the eyelids, in closing, were liable to pass behind the equator. The protrusion was caused by an orbital tumor, firm, but not of scirrhous hardness, with an anterior surface of uniform convexity.

The movements of the globe were greatly restricted; but rotation outward, downward, or upward could be performed to the extent of a line; and the centre of

movement was coincident with the centre of the globe, showing that there could be no great amount of adhesion of its posterior surface to the tumor. Vision was limited to the perception of a bright lamp at six inches distance, over a small portion of the temporal side of the field. The ophthalmoscope showed marked neuro-retinitis and swelling of the disc, with considerable mechanical hyperæmia. There seemed no ground for refusing to operate. The existence of a growing tumor could not be doubted. The integrity of the eyeball, except for the neuro-retinitis produced by pressure, the preservation of some muscular action, the absence of scirrhus hardness, or irregular surface of the tumor, and the healthy aspect of the child, all encouraged the hope that the tumor was defined and benignant. The absence of cerebral symptoms, the normal condition of the mental functions, the perfection of the vision movements, and appearance of the right eye, all rendered it improbable that the tumor extended to the brain.

Prior to the operation a careful examination was made, under chloroform, after luxation of the globe. The tumor was found to lie entering within the core, inclosed by the recti muscles, and the optic nerve was lost in its anterior surface. The globe being removed in the ordinary way, and a thin layer of adipose tissue divided, the surface of the tumor came into view. Its sides were found to extend to the walls of the orbit at several points, but were nowhere adherent to the periosteum. It was easily enucleated, except for one long process, which seemed to include the whole of the orbital portion of the optic nerve, and which was afterward excised up to the optic foramen.

For four days all went well; but on the fifth day sudden collapse occurred, followed by temporary recovery. On the tenth day, collapse, followed by irregular pulse, acute headache, coma, and death, on the twelfth day, from meningitis.

The tumor was pronounced by Virchow to be glioma, and seemed to be completely limited. From this circumstance, and from the fact that the symptoms of meningitis only appeared ten days after the operation, when the orbital wound was already healing, it was surmised that some independent source of mischief would be found within the brain. This expectation was realized by the discovery of a tumor as large as a walnut, situated at the base of the brain, close behind the crista galli, and connected with another, more than twice its size, in front of the left corpus striatum. These tumors were described by Virchow as neuro-glioma, and no union could be traced between them and the tumor of the orbit. The one seated at the crista galli completely enveloped the chiasma and a portion of the right optic nerve, insomuch that the nerve fibres could not be certainly distinguished from the morbid growth around them.

V. Graefe remarks at some length upon the remarkable fact that such tumors should not only fail to produce symptoms from which their presence might be suspected, but that they should even fail to produce any symptoms at all. He points out that the symptoms of cerebral tumors usually depend, first, upon the interruption of the conducting function of the fibres invaded; secondly, upon the irritation of surrounding parts, often propagated along the nerves as neuritis descendens; thirdly, upon the pressure exercised upon bloodvessels, by which the nutrition of distant parts of the brain may be affected; fourthly, upon the increase of intracranial pressure, by which arterial ischæmia, venous hyperæmia, and serous transudation may be produced, together with general brain disturbance, and with the characteristic phenomena of arrested circulation (*Stauung's phänomen*) in the papilla. From the case related, and especially from the perfect function of the

right eye, notwithstanding the complete engagement of its nerve in the tumor, he infers that the symptoms due to arrest of conducting power are of no very great value; and he suggests that the absence of other symptoms may have been due to the formation of the tumor at a very early period, even during foetal life, and to its very slow growth during the time of infancy, when the power of the bones and of the soft parts to accommodate themselves to its pressure would be considerable.

New Instrument to Prevent Wounding the Iris in Operations for Cataract.

Dr. M. S. THOMAS, of Leavenworth City, Kansas, reports, in the *Leavenworth Medical Herald*, a case of cataract, where the iris was prolapsed in making the section of the cornea and the knife withdrawn before it could be completed. A curved blunt hook was introduced, for the double purpose of replacing the iris, and serving as a director, which adapted itself well to the circumference of the cornea within the anterior chamber. The cataract was then extracted in the usual way. The result was good.

To prevent in a measure the wounding of the iris, in the operation for the extraction of cataract, which the writer regards as a very serious matter, the use of a small silver director is suggested. The instrument consists of a semicircular head, from one to one and a half lines in length, one half line thick, and made to correspond by its convex border to a little less than one-half the circumference of the cornea within the anterior chamber. It has on both sides, for either eye, a groove one-half line from its convex margin, and corresponding when introduced to a point on the cornea, one-twentieth of an inch from the sclerotica. It is made of silver, and the handle fixed as in other eye instruments.

The inventor recommends this instrument under the following circumstances:

- 1st. In any case where the knife is withdrawn on account of prolapse of the iris, before the section of the cornea is completed.
- 2d. Where the globe is so much sunken, that the knife cannot be progressively advanced.
- 3d. To obviate the use of scissors, to complete a section.

Traumatic Injury of Eye with Continued Presence of Foreign Body.

In the Boston City Hospital, service of Dr. H. W. WILLIAMS (*Boston Medical and Surgical Journal*, February 27th, 1868), a boy of sixteen was admitted, who was struck in the right eye by a piece of percussion cap, six years since; but except very transient symptoms, after the injury, eye was quiet.

Examination shows iris tremulous, lens absorbed, capsule remains behind field of pupil; scars on cornea and ragged hole in the iris, and another behind this in capsule. Pressure upon the upper part of globe causes pain. It is probable that the foreign body is in this vicinity. Vision is limited to perception of colors. No operation advised while eye is free from active symptoms.

Professor KNAPP, of Heidelberg, reports the results of an examination of two cases, of eyes afflicted with this disease, coming on during puerperal fever (*Archiv für Ophthalmologie*, Bd. xii, abt). There were thrombi in some of the vessels, and

metastatic deposits in various parts of the body. Professor Knapp considers the affection in these cases were caused by embolia in the capillaries of the choroid. Other authorities believe in the propagation of inflammation of the meninges of the brain along the sheath of the optic nerve. As to the case of foreign body, Dr. Williams relates a case of his, where a piece of steel having entered the eye gave rise to no disturbance for fifteen years, and then produced inflammation of one eye and sympathetic ophthalmia of the other, only relieved by enucleation of the injured eye. We are never safe in predicting quiet after the entrance of a foreign body into the eye. We should warn the patient to be on the watch for the first symptoms of any disturbance.

Remarks. The first of these cases is a good example of the suppurative chorioiditis, or pain-ophthalmitis, which not unfrequently occurs in pyæmia, cerebro-spinal meningitis, puerperal and other malignant fevers.

Inspissated Cerumen.

Dr. D. B. ST. JOHN ROOSA, of New York, in the *Medical Record*, October 1st, 1867, says:

Among the laity, and even in the profession, hardening of the ear-wax is regarded as quite a common and harmless affection. All forms of deafness are ascribed to this cause, and the first treatment that many ear patients receive is a vigorous syringing, to see "if the wax be not hardened," and this often without any preliminary examination. Impacted cerumen is indeed quite a common occurrence, but it is by no means as simple an affair as has been generally supposed. I do not mean by this that it is anything more, as a general thing, than a local affection; but as such it may produce results very detrimental to the function of hearing. It hardly seems to occur more frequently in persons with a soft skin than others, as has been suggested by some authors, for, among the patients whom I have seen, careful examination has failed to detect any such origin. Persons with a dry and harsh skin have as often come to me with impacted cerumen as the opposite class. A frequent cause is the too careful washing of the auditory canals with soap and water, which some over-clean persons delight in doing. This rinsing out of the canal plugs the natural yellow wax, which is on its way out down to the bottom of the canal, and being continued morning after morning, at last fills up the ear, and when the drum is once fairly covered and pressed upon, and *not till then*, deafness results. It is somewhat remarkable how long persons may have the ears plugged up with hard wax without being aware of it. On examining patients who present themselves with impacted wax, only causing deafness on one side, we will nearly always find the same condition of things as to the wax in the other ear. If the cerumen be very black and hard, and if it comes out in one large plug, we may conclude that it has been there for years. I recall two cases in which, from definite accounts, we could safely conclude that five years had elapsed since the deafness occurred. In both of these cases the hearing became normal after the wax was removed. Impacted wax sometimes causes serious inflammation of the canal and drum. In one case, that of a young lady, suppuration of the drum resulted from hardened wax pressing upon it, and the wax was removed spontaneously like a shot from a pistol, and, as was stated, with almost as loud a report. This evacuation was preceded by the most intense pain. The removal of a plug three-fourths of an inch long from the other auditory canal,

and which was wedged in very tightly, saved the patient from the inflammation which was so troublesome on the other side. In another case, still under treatment, what was supposed to be on first examination a plain case of inspissated cerumen, was found, after removal of the wax, to be one of inflammation of the integument which lines the canal. The wax was a huge scab from an ulcerating surface. I have seen other cases like this.

Inspissated cerumen causes many symptoms. The prominent ones are:

1. Sudden deafness.
2. Tinnitus aurium.
3. Vertigo.
4. Earache.

Of course an examination is the only method of clearing up the diagnosis. This examination should be undertaken with the ear mirror (or otoscope, properly called), and not with the syringe. In other words it should be ocular and not tactile. The trouble can hardly be confounded with any other affection. Wax which presses upon the drum is almost always black, not yellow, and nearly fills the canal. No decided prognosis can be given from seeing the wax, as to whether its removal will restore the hearing. Hardened cerumen very often forms over a perforated or ulcerated *membrana tympani*, and is then of course only a small part of the disease. It often results also from the dropping of oils into the ear for some therapeutical end seldom attained. The original disease for which the oils were used was then probably an affection of the cavity of the tympanum.

The habit of examining the ear in all cases with head symptoms, will sometimes assist materially in clearing up a diagnosis. I once cured a man from the effects of a supposed sunstroke, by removing inspissated cerumen, who had been treated for two months in an hospital for cerebral disease.

Patients who have once had impacted wax, are apt to suffer again from the same cause. Such may be advised to have their ears syringed with a solution of bicarbonate of soda and water, about once in two months. The removal of the hardened mass is very often a tedious affair. I once spent an hour a day for a week in removing a mass from the ear of a lady patient. In the interim, the best solvents, such as soda, were used.

With previous soaking the canal with a warm solution of *sodæ bicarb.*, say a drachm to the half-pint, ten minutes will generally suffice to remove the mass. A good India-rubber syringe, holding at least four ounces, should be used, and the auditory canal well straightened by holding up the auricle with the left hand, at the same time syringing with the right. The glass syringes are of no use. The stream sent in should be vigorous but steady, and care taken not to inject it with such force as to cause pain or dizziness. There should never be any pain caused in syringing the ear for any purpose. Where pain is produced, syringing will do harm. A thin bowl is held under the ear by the patient. No assistant is needed. No towel need be placed on the patient's neck, for with careful manipulation no water will be spilled.

Professor Gross recommends the use of a pick for the removal of impacted wax. This does very well as an aid where the wax is very hard. If it be used, the surgeon should have a mirror on his forehead, and never put the pick in the canal, unless he can see just what he is doing. Painful and even destructive inflammation may be caused by this mining-out process. The general practitioner, to whom ear cases come in only a small proportion in his daily rounds, had much

better rely on the use of a syringe and warm water where possible, having previously moistened the canal with a warmed solution of soda, zinci sulph., or with glycerine and water, sweet oil, etc. Inspissated cerumen rarely occurs in children. I suppose there is no difference in the liability of the sexes, and I know of no well established proximate cause, except the one given in the beginning of this article, i. e., packing the meatus by the frequent pouring in of water. Yet we might say that it is common for hardened wax to collect about a foreign body in the ear, such as a raisin, introduced originally to relieve earache, a cherry-pit, etc.; but here the inspissated cerumen is only a concomitant. It is hardly to be credited, although formerly generally believed, that a diathesis has anything to do with it, or that there is any disease of the ceruminous glands. The cause is probably, in one way or another, mechanical—that is, there is some interference with the normal and daily removal of the secretion.

Anatomy of Membrana Tympani.

J. ORNE GREEN, M.D., translates for the Boston *Medical and Surgical Journal*, December 5th, 1867, portions of Gruber's recent monograph on the membrana tympani.*

The dermoid layer of the membrana tympani is merely a continuation of the dermoid covering of the external meatus, which loses some of the elements of the cutis, so that the layer becomes thinner and thinner from the outer ear toward the central point of the membrana tympani. The layer becomes thicker around the malleus, but this is due to a collection of fibres separate from the dermoid layer, descending from the upper wall of the external auditory canal. On preparing a membrana tympani under water, a band of connective tissue is found, beginning on the upper periphery, with a basis of from $1\frac{1}{2}'''$ to $2'''$, extending down each side of the handle of the malleus to its lower extremity. The fibres then separate; some pass centrifugally into the dermoid layer, while the greater part pass around the "umbo," or most concave point of the drum, to unite with the fibres of the other side. This band of fibres contains the vessels and nerves supplying the membrana tympani, and also serves to bind a formation of cartilage that has hitherto escaped observation.

The part of the malleus which is united to the membrana tympani is embedded in that membrane for only one-third of its width; the other two-thirds are merely crossed over by it. If the malleus be removed by cutting through the mucous membrane along the neck and handle, and then drawing the membrana tympani away, it is found, as a rule, that there is but an occasional and slight union between the malleus and the membrane, which allows the two to be separated as far as the umbo, where the union is quite firm. A magnifying glass will show that on the part corresponding to the small process and the handle (or long process) there is a cartilaginous formation, having a distinct form, viz., that of a deep gutter closed at the upper end, making a cartilaginous cap for the small process of the malleus. The other end is open, becomes more and more flattened, and is finally lost in the substance of the membrana propria. The best view of this cartilage is to be obtained in transverse sections, which show that the cartilage is thickest at the upper end. Dr. Gruber has found this formation not only in the

* Anatomisch-physiologische Studien über das Trommelfell und die Gehör Knöchelchen. Von Dr. Josef Gruber. Wien, 1867.

human membrana tympani, but also in that of the horse, cow, sheep, pig, fox, hare, rabbit, dog, mouse, cat, and rat.

Besides the radial and circular fibres of the membrana tympani, Dr. Gruber has found an oblique layer; still another set he names ramifying fibres. These are bands of fibres of varying shape, scattered irregularly over the whole surface of the membrane, but always to be found in the greatest quantity on the posterior segment. All the different layers are connected together by a delicate connective tissue.

The tensor tympani muscle, instead of being inserted, as Von Trölsch says, on the inner border and neck of the malleus, inserts only a part of its fibres on the inner border, while the larger part are inserted on the upper portion of the malleus, directly under the chorda tympani. What Toynbee describes as the tensor tympani ligament, is the mucous membrane covering all the parts within the cavity of the tympanum. In contraction of the tensor tympani, the membrana tympani will be drawn inward and put on the stretch, but the malleus will rotate on its long axis, and the posterior surface be turned outward.

Perforation of the Membrana Tympani by means of the Galvano-caustic.

Dr. VOLTOLINI, of Breslau, in the *Monatsschrift für Ohrenheilkunde*, Berlin, December, 1867 (*Monthly Journal for Aural Surgery*), contributes an article on this subject, in which he narrates a case where he has performed the operation. After an historical sketch of the operation for causing a permanent opening in the membrana tympani—the objections to which he considers as mainly theoretical, since the objectors have not performed the operation—Voltolini narrates a case where he made an opening in the membrana tympani by means of the galvano-caustic. For the first case, Dr. Voltolini chose one where there was absolutely no hearing power to lose.

A man, 23 years old, in 1864 was afflicted with fever, from which he was sick for weeks; his hearing, however, was not affected. After he had so far recovered that he was able to go about in the yard, he was exposed to a great draft of air. Tinnitus occurred in both ears, which increased more and more until he was obliged to take to his bed in the hospital. He could not tell from what disease he suffered, but at any rate he became deaf and blind. The blindness was from cataract, for which he was operated upon by Prof. Förster, of Breslau, with success. On account of his deafness he came to me; but all treatment through the Eustachian catheter proved of no avail. I wished to perforate the membrana tympani, but it was not possible to chloroformize the patient without danger, and the patient could not tolerate the operation without chloroform. He went away, and I did not see him till the fall of 1867. He was then absolutely deaf, with constant noise in his ears day and night. He could not hear the slightest sound, even through a speaking-tube. There were no marked changes on the membrana tympani. The Eustachian tube was open. The patient was put under the influence of chloroform, and an attempt made to take out a piece of the drum, but it was unsuccessful, on account of the jumping of the patient when the knife touched the drum, even when fully anæsthetized. After a few days' rest, the membrana tympani was perforated without the use of chloroform, by means of the galvano-caustic. No pain was caused. [The operation and instrument are then minutely

described by Dr. Voltolini.] Both drums were perforated; one a few days after the other. Nine days after, the opening made in the first ear was sound and clean; hearing, the same; tinnitus lessened; head felt better. Patient will be treated internally and externally with the bichloride of mercury, and Dr. Voltolini will inform his readers of the subsequent results. It is probable that in this case the same morbid process has occurred in the labyrinth that took place in both lenses of the eye, i. e., exudation, with opacity; on this account instillations of bichloride are to be used, in order to act through the perforation powerfully upon the wall of the labyrinth. Voltolini concludes by the expression of the belief that this operation has a future; that it is painless; and in this case, that no dangerous results occurred.

Resection of the Handle of the Malleus.

Dr. ROBERT WREDEN, of St. Petersburg, Russia, in the *Monatsschrift für Ohrenheilkunde*, November, 1867, No. 2, advises the resection of the handle of the malleus in certain cases of deafness and tinnitus aurium.

The theoretical reasons for the operation, which Dr. Wreden has performed several times on the cadaver and the living subject, in the presence of several eminent medical men, are:

1. Since the chief nutrient supply of the membrana tympani runs along the handle of the malleus with the resection of the latter, the chief source of nutrition of the central part of the drum must be cut off, and thus in case this part is cut out, its capability for regeneration, that is, the formation of a cicatrix, will be diminished.

2. By resecting the handle of the malleus, we are enabled to cut out a larger piece than is otherwise possible.

Two instruments are described for the performance of the operation. The patient is chloroformed. The after-treatment is antiphlogistic. The hearing is immediately improved, although there is some considerable hemorrhage.

The following are the indications for *sphyrotomy*, as this operation is called:

- 1st. Great thickening of the membrana tympani. (Frequent.)
- 2d. Adhesion of the membrana tympani to the wall of the labyrinth.
- 3d. Adhesion of the pharyngeal orifice of the Eustachian tube. (Very large.)

(c.) NOSE, MOUTH, AND THROAT.

Closure of a Hole in the Hard Palate by the Soft Parts of the Cheek.

At the present time, when Langenbeck's brilliant method of uranoplasty is justly receiving so much praise and attention, it is not uninteresting to hear of a case in which that operation was followed by a perforation which was ingeniously closed by a flap from the cheek. The original opening (the result of a self-inflicted pistol shot in the mouth of a twenty-nine years old man) was in about the middle of the hard palate, 2½ centim. long and 2 centim. broad. Who performed the uranoplasty is not mentioned, but the denuded bone became necrotic on the left half and a perforation resulted reaching from the alveolar process to the median line, and over 2 centim. in length, accommodating the end of the forefinger. Professor C. THIERSCH, of Leipzig, in his clinic on the 17th of May last, performed the following operation:

He pared the edges very freely, removed the first and second molar teeth, and smoothed their alveolæ even with the plane of the palate, made an incision through the remaining gum, from the edge of the hole to the mucous membrane of the cheek, and loosened it with a rasp or elevator; then, having ascertained the proper place and size of the flap needed, by pushing with the forefinger the cheek from without into the hole, the mouth being held widely open, he formed the flap by introducing the index finger of the left hand under the cheek, with the mouth closed, and pushing a knife at the upper beginning of the naso-labial sulcus through the whole thickness of the cheek, carrying the incision down to half a centim. above the commissure of the lips, commencing his second incision 2 centim. from the first, and carrying it down divergingly so that it was $3\frac{1}{2}$ centim. distant below, and uniting the lower ends of these two incisions by a curved third one. The flap obtained was $5\frac{1}{2}$ centim. long, attached above, where it was 2 centim. in width, while it was $3\frac{1}{2}$ centim. wide below. After cutting off projecting muscular fibres and mucous glands, and loosening the mucous membrane at the base (which became necessary because the mucous membrane of the flap was found to be unfortunately smaller than the skin), the flap was turned into the hole and held to the edges by eight sutures, its bridges having been fastened to the gum by two stout sutures previously; and finally all but the upper part of the wound on the cheek was closed. Everything healed by first intention, although in the course of the second week two small places along the edges of the flap, one in the anterior portion 5 millim. in length, and one in the posterior portion 1 centim. in length, separated again, and have remained so, seemingly without much detriment.

At the time of the report in the *Archiv für Heilkunde*, 2d Heft, 1868, p. 159, three-quarters of a year after the operation—the operation is pronounced a perfect success in spite of the remaining unclosed of the two small clefts alluded to—they could probably be closed easily, but the patient is well satisfied without. The wound of the cheek has of course long been entirely closed, and the scar is not a bad one. The flap, Dr. Thiersch says, is perfectly acclimatized, is soft, elastic, and its surface projects a little above the plane of the hard palate. Closure during drinking is perfect, and the only annoyance that the patient has, proceeds from the beard hair of the flap, which in spite of the disexpectoration and removals, continues to grow vigorously.

This case is probably the first and only one as yet reported, in which a closure of a perforation of the hard palate was accomplished in this way. Professor Langenbeck, of Berlin, the authority *par excellence* in uranoplasty, thought very unfavorably of this operation, and feared that so heterogeneous edges would not make a good result; but this case certainly seems to have succeeded, and Professor Thiersch recommends this method not only in cases of lateral openings in which Langenbeck's method may for some reason or other be inapplicable, but he suggests also that in very wide complete deficiencies of the hard palate, in which no ledge of bone whatever exists, the attempt might be made to close the opening by two flaps, one from the right and one from the left cheek, made to meet in the median line.

Alleged Spontaneous Cure of Congenital Cleft of the Soft Palate.

On the 4th of December last, Dr. TRÉLAT, of Paris, presented to the *Société de Chirurgie* (*L'Union Médicale*, No. 146, 1867), a patient who talked as patients

usually talk after a successful staphyloraphy, and on inspection the palate was found to look as though such an operation had been performed. But the patient denied that any operation had ever been performed, and insisted that though his parents and he had been urged when he was a child to have the operation performed, this had been refused, and that since his 13th year, his palate had been as it was now found. The man is now 50 years old. If his story is true, his case is certainly a unique one.

Case of Intense Neuralgia of the Tongue Cured by Excision of a Portion of the Lingual Nerve.

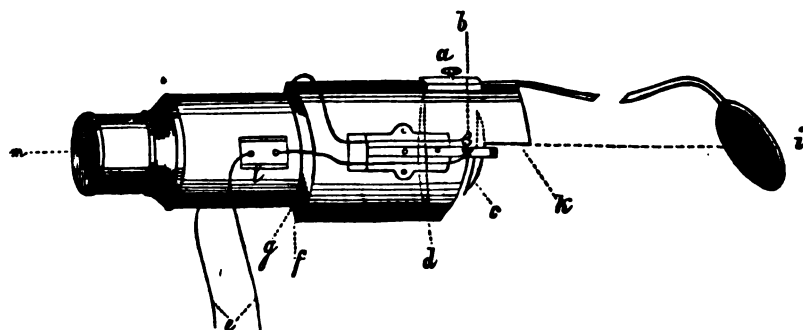
The *Gazette des Hôpitaux*, No. 8, 1868, contains the details of a case of intense pain in the left half of the tongue, the patient being 64 years old and the mother of 12 children. The tongue was thickened, a peculiar pricking sensation was felt in it, and the slightest movement in eating, drinking, or speaking, caused intolerable agony. Morphia and hypodermic injections were used for a month without doing any good. The patient could not sleep and dared not eat on account of the terrible pain. Opium, iodine, iodide of potassium, arsenic, ice, acupressure, local anæsthesia by ether, electricity, etc. etc., were of no avail. Finally Dr. VANZETTI, of Padua, made an incision along the whole left side of the tongue, which gave great relief for about two weeks; after this time the pain returned worse than ever, and a portion of the lingual nerve was then excised. The tongue having been pulled well forward, an incision was made between the gum and tongue, from the last molar forward. By a careful dissection the nerve was then exposed as far back as the edge of the internal pterygoid muscle, and nearly an inch of it was removed. The pain ceased from that moment and has not returned (after more than sixteen months). The patient could at that time not distinguish the taste of quassia from that of sugar on the left side of the tongue, and the common sensibility of the tongue is also impaired.

A New Laryngoscope.

Dr. HOHL, of Halle, describes, in the *Deutsche Klinik*, No. 1, January 4th, 1868, p. 6, a laryngoscopic apparatus in which galvanism is employed for producing illumination. It is modelled after Dr. Julius Bruck's "urethroscope and stomatoscope by means of galvanic light" (see pamphlets, Maruschke and Berendt, Breslau, 1867), and consists, aside from the batteries, of three separable parts, viz., the mirror, the illuminating, and the ocular. The first is held by a set screw, allowing of attachment of mirrors of different sizes, etc.; the second part is the most important; it is a hollow cylinder containing two copper wires terminating and uniting in a spiral piece of platinum wire; just in front of this spiral is a concave reflector, and back of this, at the proper distance, the illuminating mirror; the ocular part is added partly to serve as a handle and also to see through, excluding all other light, and also giving room for a magnifying lens if any such is desired. When the copper wires are connected with the battery, the platinum wire spiral becomes white hot. Its light is thrown by the reflector upon the illuminator, and from here upon the laryngeal mirror. The operator may either look through the ocular, or by its side, as he pleases; at all events the illuminator is perforated in the centre, while the spiral and reflector are placed laterally out of the direct line of vision. The annexed sketch gives a sufficiently clear idea of the whole apparatus.

Its advantages are stated by Dr. Hohl, to be, 1, its light is very intense; 2, the reflector and illuminator require no adjustment, being always in place; 3, the illumi-

FIG. 9.



nation accompanies the motions of the laryngeal mirror; 4, a stand is done away with, which simplifies matters very much; 5, one hand carries with ease illuminating apparatus and laryngeal mirror, leaving the other free for operation; and 6, magnification of the image is rendered very convenient. I have not yet procured this novel apparatus, but intend to do so. While I cannot at present express any opinion as to its merits, I may say, that if not too heavy or clumsy to allow of facile and delicate manipulation with the free left hand, I am favorably impressed by this apparatus, especially as a portable apparatus. The battery which Dr. Hohl recommends (with sulphuric and nitric acid) had better be replaced by the "Lec-lanché" battery.

An Œsophagoscope.

FIG. 10.



Mr. JOHN AYLWIN BEVAN, of Guy's Hospital, London, describes and figures in the *London Lancet*, of April 11th, 1868, what he calls an Œsophagoscope, by which and with an ordinary candle the precise position and nature of foreign bodies, strictures, morbid growths, etc., can be, according to him, clearly seen. It consists of a tube about four inches long and three-fourths of an inch in diameter, and having a couple of screws, which allow of its easy insertion and adjustment to any angle, which is attached to above by a bayonet movement. "The process is easily understood. All that is necessary is to fix a mirror to a tube at an angle of about 45° , and to turn it toward the cavity to be examined. The light may be supplied direct from a candle, but still better if reflected from a two-inch mirror; and for this purpose the endoscope supplied by Mr. Mayer, of Great Portland Street, and lately improved at Mr. Hinton's suggestion, is the best contrivance I know of. The illumination may be carried to almost any extent by using the magnesium lamp made for me by Mr. Mayer; so that not only the Œsophagus, but the stomach, may be demonstrated, should this answer any useful purpose."

How best to Raise the Epiglottis in Laryngoscopic Operations.

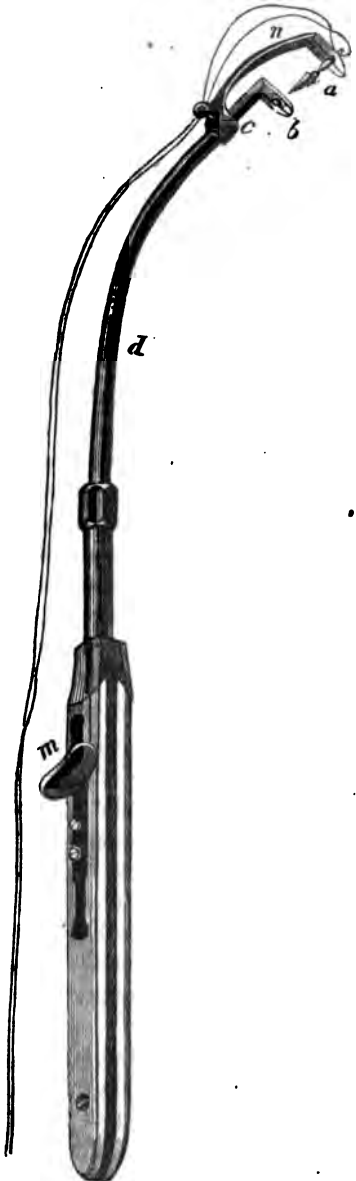
This is a problem that has always occupied laryngoscopists. After having tried all the numerous hooks and forceps and snares and other "holders" heretofore

devised, and even myself added two or three to the already too large number of such instruments, I have thrown them all aside for a simple, properly bent staff (a modification of Voltolini's), relying mainly on "educating" the parts and the patient. Türc's plan of passing a silk suture through the upper edge of the epiglottis struck me as the most ingenious expedient—in theory. I procured his "needle-holder" two years ago, experimented conscientiously with it, and soon gave it up. Now Dr. TOBOLD, of Berlin, publishes in the *Deutsche Klinik*, No. 3, January 18th, 1868, p. 26, the description of a new instrument for the same purpose, which really seems to do away with the practical difficulties experienced in the use of Türc's. The sketch (three-fourths of its real size) makes it so plain that it hardly needs further explanation. The needle-catcher *b* is movable by means of the knob *m*; thus, after having the epiglottis between the needle *a* and the plate *b*, it is pierced from behind forward and the needle withdrawn, apparently with ease. At present, without personal experience with it, I can only express the hope that it may prove as successful in the hands of others as Tobold claims it to be in his. An available means for raising and fixating the epiglottis is certainly just now a most needed contribution to the progress of laryngoscopic surgery. I shall probably have occasion to speak of this subject again in my next half-yearly report.

Loss of the Epiglottis.

Cases in which "destruction of the epiglottis has taken place in such a subacute manner that the patients have experienced neither pain nor loss of speech—in fact, that they were not at all aware of the deficiency," are by no means usual; still they have been observed a number of times since the introduction of laryngoscopy. Dr. HERMANN BEIGEL, of London, publishes two such cases, both tuberculous patients in the Metropolitan Free Hospital, in the *London Lancet*, April 25th, 1868. "Cases in which the epiglottis or a portion of it has been lost in consequence of inflammatory affections of the larynx, followed by necrosis of the arytenoid or other cartilages, have not unfrequently been observed. The symptoms in such cases are generally very distressing, so as to necessitate even tracheotomy. If cure is effected, loss of speech or other functional defects of the larynx often remain."

FIG. 11.



Anæmia and Hyperæmia of the Larynx.

In a "Résumé of the Treatment of Laryngeal Diseases," presented by Dr. L. ELSBERG, of New York, to the New York *Medical Journal Association*, December 27th, 1867, are the following condensed remarks on anæmia and hyperæmia: That no knowledge of the existence of anæmia in the interior of any individual living larynx was possible before the introduction of laryngoscopy, and that its diagnosis even now is impossible without using the mirror, is a matter of course. It is often observed in chlorotic and anæmic individuals after severe attacks of disease, and especially in incipient phthisis. In patients hereditarily predisposed to tuberculosis, anæmia of the respiratory mucous membrane is sometimes the first signal calling attention to their true state. But it sometimes occurs as an apparently independent local condition, giving rise to subjective symptoms very annoying to the patient, and (I had almost said still more) annoying and baffling to the practitioner. Great sensitiveness to changes of weather or temperature, and a whispering or constrained low (*i.e.*, not loud) tone of voice, usually characterize it. Its laryngoscopical diagnosis, particularly when well marked, is very easy for one properly familiar with the look of healthy laryngeal mucous membrane *by the light he works with*. In treatment the general health must be taken into careful consideration. Usually tonics, iron, etc., must be given internally for a long time; all systemic functions should be watched and regulated, if need be. The local, and in nearly all cases indispensable, treatment consists in *stimulation* of the mucous membrane by the application with a small laryngeal sponge of a solution of nitrate of silver of not more than five to ten grains to the ounce of distilled water to all the parts, made *under sight*; direct insufflation of powdered alum, or the galvanic current, the positive pole being on the outside of the larynx, and the negative moved—constantly of course under the control of the laryngoscope—over the anæmic membrane, directing in addition, in stubborn cases, the inhalation by the patient at home, a number of times in the day, of nebulized solution of nitrate of silver, or sulphate of copper, or any other equivalent stimulant. [All nitrate of silver spray for inhalation should of course be made by some instrument which admits of the end being taken into the mouth.] Paradoxically, as it at first seemed to me, I have found temporary *entire rest* of the voice, and even though deep, yet very quiet, unexcited breathing, and the same equable state of mind in the patient, very useful helps in overcoming this as well as the opposite condition of the mucous membrane, *viz.*, hyperæmia, in the treatment of which, as we shall presently see, and might well, *à priori*, expect, this *rest* forms a very important remedy.

Hyperæmia, congestion, varicosity, and hemorrhage.—We are enabled to recognize, not only when the laryngeal mucous membrane contains temporarily or continually too much blood, but also whether the injection is active, whether there is venous congestion, etc. There may be hyperæmia from acute irritants; or *varicose veins* as a secondary disease; the walls of the vessels may have lost their elasticity, and thus allow themselves to be dilated with blood, or the congestion may be still more mechanical, as in diseases of the heart, pressure of tumors, etc. Again, there may be ecchymosed spots, and hemorrhages, or passing through of blood, without as well as with solution of continuity of the mucous membrane, or hemorrhage into the submucous areolar tissue, or bleeding from certain ulcers and tumors. But we need not dwell here upon diagnostic differences, as the treatment

in these conditions is mainly the same, viz., by astringents and rest. Within certain limits the performance of its function reacts on an organ as a stimulant and irritant, while rest exerts indirectly, if not directly, a soothing, sedative, recuperative influence. The hyperæmia often induced in the laryngeal mucous membrane by too severe or too prolonged exertion of the voice, subsides usually by rest alone. Acting as a passage-way for the air into and out of the lungs, as well as being the organ of voice, the larynx, though its twofold function allows of no complete repose, may be rested not only by taciturnity, but also by quiet, unexcited breathing of unirritating air. As to astringents, they must in most cases be applied to the spot by means of the mirror; for though hyperæmia, brought on by too much talking or singing, or other comparatively slight causes, will usually yield to the inhalation of nebulized cold water, or solution of tannin or alum, we cannot in severer or chronic cases trust to the spray inhalation alone. As an adjuvant such inhalation is useful in all cases. The local application of saturated solution of tannin or alum, or dilute solution of persulphate of iron, or the like, should be made with the sponge-carrier or brush. It is very rarely that any other treatment is necessary, but there are a few cases of chronic and entirely localized congestion in which the astringents succeed only after previous accurate scarification of the parts.

Case of Chronic Catarrh of the Larynx.

Dr. FRIEDRICH FIEBER, of Vienna, who occupies a very high place in our estimation, on account of his able and valuable contributions to the development of the nebulization of liquids, has presented to the "Austrian Imperial Royal Society of Physicians," and published in the *Wiener Med. Wochenschrift*, No. xi, Feb. 5th, 1868, p. 176, an account of a case of "chronic catarrh of the larynx, paralysis of the left true vocal chord, and anæsthesia of the laryngeal mucous membrane." The mucous membrane of the whole larynx was red and swollen, especially intensely at the epiglottis; the left vocal chord showed numerous little vessels, the right a uniform dark redness; the tension of the latter was so much diminished that it hung like a stump or tumefaction, and hardly moved in the attempt at phonation, while the left made its excursion toward the median line. Pulmonary phthisis had previously been suspected, but auscultation and percussion revealed nothing abnormal in the lungs. The treatment consisted in inhalation of nebulized strong solution of tannin (how strong, or how often, or how long inhaled, is not mentioned), and insufflation of powdered alum, guided by the laryngoscope, at first daily, afterward every other, and then every third day. There was at first anæsthesia of the laryngeal mucous membrane, which gradually gave way, and in the course of a couple of months the patient, a woman, thirty years old, hysterically inclined, was cured. Dr. Fieber calls sometimes the right, sometimes the left the paralyzed vocal chord, and in his assertion that this case presents a complication of pathological processes occurring rather rarely, he is also mistaken. Similar cases form quite a large proportion of laryngeal diseases.

Case of "Chronic Croup."

On the 5th of February last, Dr. WALDENBURG, of Berlin, related a case to the "*Medicinische Gesellschaft*" (*Berliner Klinische Wochenschrift*, No. xi, March 16th, 1868), which he called one of chronic croup, or chronic diphtheritis—not

knowing which designation would be the more correct—which in some respects seems certainly unique. A man, over eighty years old, had suffered for several months from what at one time appeared as croupous deposits, and at another diphtheritic infiltrations, involving the palate, tonsils, pharynx, and larynx. They occurred in circumscribed or irregular patches, about the size of a silver quarter; being either white pseudo-membranes, which could be removed without difficulty, and then left a slightly eroded, easily bleeding surface, or gray or yellow infiltrations into and through the tissue of the mucous membrane, which itself then ulcerated. As soon as one place was healed, new eruptions appeared in the same or neighboring spots. Dr. Waldenburg can compare the affection only with exanthema—the patient has suffered also from circumscribed eczema of the face. The result of the microscopic examination of the pseudo-membranes agreed with that obtained in croup; nothing parasitical (no spores) could be found. The patient was completely cured by means of nebulized lime-water inhalations. A recurrence, after four months, was successfully treated in the same way, and is now apparently permanently cured.

Catheterization of the Air-Passages in Asphyxia Neonatorum.

It has often been urged that expiration of mucus and other matters, and the general opening from within outward, or below upward, of the respiratory tract, is the one thing needful in asphyxia of the new-born before regular and natural inspiratory movements can go on. On this account, catheterization combined with suction rather than insufflation has often been relied upon in such cases. Dr. BILLMANN, of Neustadt, relates, in the *Aerztl. Intelligenzblatt*, No. xlix, 1867, the case of a new-born apparently dead, in which he introduced a thin catheter into the larynx and made forcible suction. A thick, tenacious, somewhat bloody phlegm passed into the catheter, and immediately a short, deep inspiration took place. After four or five repetitions, breathing became gradually established. Aspiration had to be repeated, because phlegm from the smaller and smallest ramifications followed into the larger branches and larynx after the first removal from these. Dr. Billmann admits that electricity may be the most certain means of exciting the contraction of the inspiratory muscles, but urgency and other circumstances of the case often prevent its application. The introduction of the catheter is, however, he says, in itself also a powerful excitant to respiratory movements, and the aspiration of the phlegm and the entrance of the air into the emptied organ are acts so directly stimulating, that it can hardly fail where there is any chance of life left. He strongly condemns the insufflation of air into the mouth, firstly, because the air hardly ever gets into the lungs, and only presses the epiglottis more firmly over the aperture of the larynx; and secondly, because so much air as does get into the lungs only blows the obstructing mucus more firmly into them. In conclusion, he warmly recommends the thin elastic catheter not only in cases of foreign bodies in the larynx and bronchial tubes, but as an important means of resuscitation from apparent death generally.

The Galvano-Caustic Loop for Extirpating Polyp of the Larynx.

Dr. RUDOLPH VOLTOLINI, of Breslau, to whom great credit is due for having introduced the galvano-cautery into laryngoscopic surgery, relates, in the *Berliner*

Klinische Wochenschrift, No. iii, January 20th, 1868, p. 27, a new case of polypus of the larynx, in which two neoplasmata, seated on the under surface of the left vocal chord, near the free border and the anterior insertion, hanging down toward the trachea, were successively caught and removed by a loop of very fine platinum wire, made instantly white hot by means of Middledorf's battery. He suggests that the charcoal cylinder should not, as is usually taught, be allowed to retain the nitric acid, when the battery is taken apart after use, but should be placed in water, for the purpose of cleansing it, until it is used again; insists throughout on the necessity of having good instruments, and keeping them in good order for operating; vindicates the superiority of sunlight for illumination, and says that nothing can supply the place of galvano-cautery in the larynx; that he has perfected the method to such an extent that he no longer operates by any other, and his other instruments are allowed to rust. As incredible as it may appear, he adds: Galvano-cautery is the mildest operative procedure in these regions; the pain is almost equal to zero; there is no hemorrhage, which, though it might not be dangerous, yet causes troublesome cough; the smallest as well as the largest growths may be destroyed by it; its action can be limited to precise spots, while every other caustic more or less affects neighboring parts, and with it we can at the same time cut, strangulate, and cauterize.

Extraction of a Pin from the Epiglottis.

Dr. TOBOLD, of Berlin, records, in the *Berliner Klinische Wochenschrift*, No. 9, March 2, 1868, a case which gives not only a new proof of the great value of laryngoscopy,—without which the diagnosis and removal of the difficulty would not well have been possible,—but also shows the necessity of accurate objective examinations. Dr. Tobold admits that if he had used the laryngoscope at once when the patient consulted him, she would have been at least saved from several days of suffering. The foreign body, which really was a pin with the head broken off, appeared as a broken needle sticking fast in the right side of the epiglottis, anteriorly. It looked upward, and with every attempt at deglutition it was necessarily pushed against the posterior wall of the pharynx, causing pain, irritation, localized swelling, and apparent abscess formation. The patient, a young lady, had consulted Dr. Tobold five days previously, complaining of having swallowed a little bone while eating soup. Finding nothing on the usual direct ocular inspection, Tobold contented himself with pushing a sound into the œsophagus, thinking the foreign body was too low down to be seen, and that he had thus pushed it safely into the stomach, especially as the patient thought that the manœuvre had given her relief. When she came back, however, a proper examination revealed the truth, and the pin was removed by means of a polypus forceps, under the guidance of the mirror, without very much difficulty.

Injections of Dilute Acetic Acid in Cancer of the Tongue.

It is too frequently the case that unsuccessful cases relating to a new method of treatment are not placed on record. I have faithfully tried injections of dilute acetic acid in two cases of epithelial growths in the mouth, one involving the inside of the lower lip, the other the tongue, and though they did seem to have a favorable influence in cleansing the ulcerating parts and shrinking the growth, they did not in either case prevent the fatal progress. Dr. ISIDOR ULLMANN, of

Thiessholz, reports a similar case in the *Wiener Medicinische Presse*, of February 2d, 1868, p. 118. D. H., 61 years old, after having felt pain in the right side of his mouth for some months, was found to have an epithelial cancer, with an ulcerating, dirty gray surface, two inches long and several lines broad. Prof. Balossa, of Pesth, made injections of acute acetic acid, for two or three months, after which time Dr. Ullmann was requested to continue the same treatment. The R. was, Acid. acet. concent. pur., ʒiij; aq. des., ʒix; morph. acet., gr. vj; M., injected with an ordinary hypodermic syringe. This was done once in eight or ten days, —altogether, about twelve times before his death, which occurred four months later. The injections certainly did much good, and made the patient more comfortable, so much so that he could not be persuaded but they would cure him. The ulcerating surfaces became much cleaner, and lost their gray, offensive secretions, yet, in spite of tonics, etc., the patient emaciated more and more, became weaker, could gradually swallow nothing but liquids, and even these only with great difficulty and pain, and died exhausted.

(d.) ABDOMEN.

Inguinal Hernia Strangulated by an Artery.

In the *British Medical Journal*, March 14th, 1868, p. 241, Dr. JOHN CLELLAND, Professor of Anatomy and Physiology, Queen's College, Galway, records a remarkable case of inguinal hernia, constricted either by an obturator artery, arising from the epigastric and arching upward in its course, or by a common trunk of unusual length, from which the obturator and epigastric arteries were given off nearer the middle line. The anatomy of the parts was somewhat obscure; but there can be no doubt that the strangulating structure was an artery. The patient was a robust man of middle age; the hernia was scrotal, of about the size of a hen's egg, and seemingly direct; the taxis made no impression on the size of the swelling, and symptoms of strangulation had existed for more than twelve hours. The superficial structures, together with a quarter of an inch of the aponeurosis of the external oblique muscle, having been divided, it was found that there was a structure like a string tightly grasping the gut on the sides, as well as in front. Being uncertain as to the exact state of matters, Dr. Clelland deemed it expedient to push an aneurism needle beneath this structure, and, in doing this, perforated the sac, when a considerable escape of sanious fluid took place, but without the effect of relieving the strangulation. An opportunity was thus afforded of examining at leisure the constricting structure, and of observing that it was certainly an artery, quite free from thickened tissue, but stretched with a tightness that made circulation impossible. The vessel was tied in two places, and was divided between the two ligatures; but the inner of the two threads became loosened, without, however, being followed by hemorrhage. The strangulation was completely relieved, and the sac was not opened further. On the following day, when the symptoms pointed to something radically wrong, the hernia had redescended. The wound was opened, and the neck of the sac, which on the previous day had been thin and uninflamed, was found thickened and tightly constricted. The sac was opened in the upper part, but was found adherent to the intestine below. The new strangulation was relieved by a probe-pointed bistoury, and the patient recovered.

**Cases of Strangulated Hernia, in which the Symptoms
Continued after Reduction of the Tumor.**

Professor JAMES SYME relates (*Edinburgh Medical Journal*, January, 1868, p. 583) an interesting and rare case of operation for the relief of hernia which had become strangulated within the abdomen. A strong man, between fifty and sixty years of age, suffered from symptoms of strangulation, after reduction of an inguinal hernia of the right side, four days previously. The return of the bowel had afforded no relief, but, on the contrary, he had continued to suffer from sickness, with frequent vomiting and obstinate constipation. Under these circumstances, Professor Syme concluded that the sac had been reduced along with its contents, which remained in a state of strangulation. He, therefore, made a free incision over the right spermatic cord, and divided its coverings so as to expose the external ring, into which he introduced his finger, and pushed it up until the lower surface of a bag could be felt. This was exposed by dividing the aponeurosis of the external oblique muscle to a sufficient extent, and cautiously opened, as it contained no fluid, and merely a portion of the intestine. At the neck of the sac there was a very tight stricture, through which a probe-pointed bistoury having been guided by the finger, free admission was afforded to the protruded bowel. There was no bleeding, and a couple of sutures closed the edges of the wound, which was covered by a compress, properly secured. The patient was at once relieved; the bowels were evacuated in less than half an hour; and an uninterrupted cure resulted.

Dr. W. L. WELLS, of Howard, Michigan (*New York Medical Journal*, May, 1868), in reporting a similar case, says: I was called in consultation by Dr. Haze for the purpose of performing an operation in a case of strangulated hernia. I found the patient suffering from hiccough and vomiting, notwithstanding the tumor had been reduced twenty-four hours. The case being a novel one, we concluded that the sac had been returned with its contents, and that if it could be brought down again the strangulation might be relieved; this, with some effort, the patient was fortunately able to do, when, grasping the lower portion of the tumor with my left hand, I succeeded, by careful manipulation, in returning the intestine, upon which the patient exclaimed that he was better, and from that time none of the characteristic symptoms returned.

**Post-Mortem Evidence of Recovery after Rupture of the
Diaphragm.**

In a March number of the *Boston Medical and Surgical Journal*, there is to be found the following important case:

Professor JOSEPH ENGEL, of Vienna, in the *Wiener Medicin. Wochenschrift*, June 12th, 1867, reports the case of a clergyman, 67 years of age, examined in the Institute for Pathological Anatomy. On the right side of the chest there was found a healed fracture of the ribs, beginning near the anterior extremity of the seventh rib, and ending at the fifth. There was no scar upon the skin.

On the superior portion of the liver, near the right side of the suspensory ligament, near its centre, the liver substance formed a perpendicular process, running superiorly, of a cylindrical form, and the end rounded off. Its height was five

centimetres, and its circumference fourteen centimetres. This fitted exactly into a sac of peritoneum, which penetrated the diaphragm at the anterior portion of the tendinous part. It was united to the base of the lung by adhesion, forming a complete hernial sac, containing a portion of the liver. The liver was adherent to the diaphragm in several places. The right lung was adherent to the diaphragm through its whole extent. Concerning the nature or time of injury nothing could be ascertained.

Case of Biliary Calculi Escaping through the Parietes of the Abdomen; Recovery.

We have the pleasure of presenting the following interesting case clipped from the *Canada Medical Journal*, December, 1867, reported by Dr. E. D. WORTHINGTON, of Sherbrooke, Canada.

On the 24th of March last, I was called, for the first time, to see a widow lady, aged 59. She had enjoyed uninterrupted good health, until about ten years ago. Since that time she had suffered once or twice a year, for a day or two at a time, from what she called "bilious attacks." In the intermediate time, her general health was good, and for the last two years, having no return of her old ailment, she considered herself, as she expressed it, "a well woman." When I saw her, she had a bilious attack, great restlessness, acute pain at the epigastrium and right hypochondrium, thirst, and incessant attempts at vomiting, bringing up from the first only what she had swallowed. Pulse unaffected. Under treatment she improved, and at the end of a week was up and going about the house.

She sent for me again on the 15th of April, and told me that though she was up she was not well, that she had a good deal of dull burning pain about her stomach and side. There was no tenderness on pressure over the liver, but I discovered a well-defined enlargement extending from below the umbilicus to near the lower border of the ribs, on the right side. It could be grasped in the hand, and felt like a large solid tumor, firm and deep in its attachments, and on pressure, caused a sensation more of faintness than of acute pain. No redness whatever externally. The patient was ignorant of the existence of the tumor.

At the end of a week the tumor was somewhat softer, more superficial, less firm in its deep-seated attachment, the skin distinctly red, and the whole swelling more painful on pressure. Even then there was no yellowness of the skin, no rigors, or other constitutional symptoms to lead any one to the supposition that the abscess was connected with the liver. Some days afterward the abscess was opened, when it discharged about twenty ounces of greenish-colored excessively fetid pus. On the fourth day a large biliary calculus was removed from the orifice, and on the fifth day, two more of smaller size.

The woman recovered and is now in perfect health.

Another case is related by the same author, but the patient died; ninety-three gall-stones were removed from the abscess.

Complete Extirpation of an Hypertrophied Spleen; Recovery.

The operation for splenotomy is so rarely had recourse to, and the dangers attending its performance are so numerous, that the following successful case performed by Dr. PEAU, will be read with interest. Translated from *L'Union Médicale*, and abridged from the *Canada Medical Journal*, March, 1868.

Mlle. Adele Cercily, aged twenty, of a robust constitution and lymphatic temperament, had always enjoyed good health until two years ago, when she noticed an increase in the size of the hypogastric regions, accompanied by acute pain, for the most part in the right iliac fossa, which resisted all treatment and gradually grew worse.

The patient consulted Dr. Peau on the 20th of August last, suffering so much that she was willing to undergo any sort of operation.

Her general health was then greatly debilitated, anæmic, great disorder of the digestive organs, dysmenorrhœa, complained of febrile attacks and diffused neuralgic pain.

The prominence of the hypogastrium was nodulated upon its surface, and occupied the position of the gravid uterus in the last months of gestation. The circumference of the abdomen measured one metre ten centimetres.

Palpation produced a little pain and showed the consistence of the tumor to be varied.

Percussion of the abdomen showed resonance in every direction except over the tumor, where it was absolutely dull, and where there was also the sensation of fluid.

Vaginal examination revealed the uterus of normal size, but wedged in the thickness of the tumor, which rendered it immovable.

The conclusion arrived at was, that the tumor was developed in the left ovary, and under this impression, on September 6th, the operation was performed. The patient was chloroformed and an incision made in the median line from the umbilicus to the pubis; four ligatures had to be applied to the bleeding vessels. The anterior surface of the tumor was found to be in contact with the abdominal walls, and covered in its whole extent by the omentum firmly adherent to it, which could not be separated. With a large trocar the tumor was punctured and three litres of thick, brownish-yellow viscid fluid discharged. When the tumor had been thus diminished in size, the hand was introduced into the abdominal cavity to search for its pedicle, but none could be found in the direction of the ovary, but the cyst was discovered to have other connections than this organ. It was now found necessary to enlarge the incision four finger-breadths above the umbilicus, and to the left where the attachments of the cyst were traced into the hypertrophied substance of the spleen; the cyst was unilocular, with walls of unequal thickness. Four metallic ligatures were carefully placed on the gastro-splenic omentum, and the entire spleen and cyst removed, employing the actual cautery in destroying their connection with the omentum; the ligatures were cut close and left in the cavity of the abdomen.

The peritoneal sac was cleared of blood by repeated sponging, and the edges of the wound brought together by nine metallic sutures inserted deep enough to include the parietal peritoneum and five twisted sutures between them. The operation lasted little more than two hours.

The case did well, and on the fifth day all the metallic sutures were withdrawn and the collodion suture substituted. On the eighth day patient left her bed, and by the tenth walked out, and notwithstanding one or two drawbacks in the way of accidental complications, the woman made a perfect recovery. The tumor weighed 1140 grammes, and on examination was found to be composed partly of hypertrophied spleen-tissue and fibrous membrane, forming the cystic walls.

Serious Result of Forcible Dilatation of the Sphincter Ani.

At a meeting of the Chicago Medical Society (*Chicago Medical Journal*, March 15th, 1868, p. 211), Professor N. S. DAVIS stated that he had been requested to see a lady, who had suffered, as she stated, from perineal abscess, and subsequently, with fistula, which a surgeon had attempted to relieve by forcible dilatation of the anus. The operation consisted in introducing one or two fingers of each hand into the rectum, and stretching the sphincter until its fibres were completely ruptured. In this case, six months after the operation, the sphincter had remained absolutely paralyzed. The unfortunate patient was totally unable to retain the feces.

Operation for the Relief of Artificial Anus.

Dr. J. C. HUGHES, Professor of Surgery in the Medical Department of the Iowa State University, narrates (*Iowa Medical Journal*, January and April, 1868, p. 31) the case of a man, thirty-six years of age, in whom an irreducible oblique inguinal hernia had become strangulated. As the details of the case are somewhat imperfect, we append his own account of it:

"Having made a longitudinal incision over the tumor, I made a careful dissection of the integument and fascia, and found the sac adherent and the intestine, to the extent of one and a half inches, gangrenous, and at two points sphacelus had actually occurred. Nothing better now presented for the patient than the formation of an artificial anus. This having been accomplished, and the point of stricture relieved, the patient was comparatively comfortable. The fecal discharges taking place from the new opening, without the controlling influence of a proper sphincter, was, to say the least, very annoying to the patient. To obviate some of the difficulties which from time to time presented, the patient thinking that the deficiency of one and a half inches of the intestine might be made up, conceived the idea of substituting a silver tube five-eighths of an inch in diameter, and of sufficient length to have each extremity retained within the open points of the intestine. This he had constructed and applied according to his own idea. The instrument not fitting completely, allowed the discharges to escape, and the want of peristaltic action in the tube prevented it from taking the place of the original. The fecal matter from above forced the entire tube into the lower opening, and the instrument disappeared beyond reach into the intestinal canal. Imagine the anxiety of the patient for four long days, when to his great surprise and gratification the instrument made its appearance at the anus. Not satisfied with the experiment, he increased the size of each extremity, and affixed a pin one inch more in length to its surface, thereby preventing even the possibility of its escape into the lower bowels. The tube again introduced did not answer the ends for which it was intended, and I was consulted in relation to an operation for the cure of the difficulty. Here was an artificial anus connected with the scrotum and involving the large intestine. The chance for withdrawal of the protruded parts within their natural cavity could not be hoped for. There were not presented the two openings in close apposition with its intervening septum, as in ordinary cases of strangulation where the knuckle of intestine presents. Had this been the case, we would have had no trouble as to the course to be pursued. But matters stood thus: The opening, one and a half inches long, occupied the side

and half of the intestine's girth, with adhesions which prevented approximation of its points of opening. A question which naturally arose was, will half the girth, if brought together, constitute a sufficient tube for the healthy performance of the various functions belonging to the canal; or would the stricture thus induced lead to more serious results than at present exists? I decided to operate, and having presented the patient before the class, pared the edges of the gut, extending the cut surfaces into the more dense structures, until the opening was completely surrounded. The surfaces were now brought together by the hare-lip suture and treated for adhesion. The contraction of the gut, and the accumulation of gases in the upper canal forced a yielding of the soft structures, followed by sloughing, and the operation failed. A second operation was performed with the same result. Feeling that so much constriction of the natural canal could not be maintained, I determined to enlarge the surface incised, by paring the integuments outside of the intestines, and then bringing the pared surfaces together, thereby converting a portion of integument into a mucous canal. This was done, and the success attending it, although not complete, has been very satisfactory. The opening is lessened over one half, and the discharges are under the control of the patient. By placing his finger over the opening, the evacuations take their natural direction.

Puncture of Hepatic Abscess.

The subject of puncture of abscess of the liver, which has been discussed recently with much vivacity by Anglo-Indian physicians, has been investigated by the Medico-Chirurgical Society of Alexandria (*British Medical Journal*, March 14th, 1868, p. 247). By numerous experiments, they arrived, in the first instance, at the conclusion that "puncture of the liver is not immediately followed by serious accidents;" and a good deal of evidence was collected to show that wounds of the liver are less dangerous than has been commonly supposed. In the course of a long inquiry, each member has given his experience of the efficacy of puncture of the liver in abscess of that organ. Of a total of eighty-two operations for hepatic abscess, large and small, there were forty-one cures, say 50 per cent. Of these abscesses, twenty-two exceeded the size of a fist; seven were cured, rather less than a third. On the other hand, of eighty-one hepatic abscesses left to themselves, only fourteen ended in cure, and these for the most part opened into the lung. It results from the same researches (*Gazette des Hôpitaux*, February 11th, 1868), that the puncture should be made as soon as the existence of the abscess is recognized, even if it be deeply situated. Some of those physicians verify their diagnosis previously by the aid of an exploratory trocar; some, after opening the abscess, introduce a drainage-tube.

(c.) URINARY AND GENITAL ORGANS.

On Lithotomy by a Semilunar External Incision,

With a view to obviate the difficulties of extracting a stone of large size. Sir W. FERGUSON, Sergeant-Surgeon to the Queen, has recently (*London Lancet*, January 4th, 1868, p. 1) practised an operation which combines the external semilunar incision of Celsus (better known as that of Dupuytren), and lateral

lithotomy as regards the deep parts of the wound and prostate. In almost every instance in which Sir William has observed difficulty in the operation for stone, whether in cutting, in seizing the calculus, or in extracting it, a short external incision has apparently been the cause. For this reason, he has made a return to the Celsian operation, so far as the superficial incisions are concerned, and strongly recommends its adoption, with a hope that it may simplify the performance and lessen the dangers of one of the most formidable operations in surgery.

His mode of procedure is as follows: The staff being introduced, the patient is to be bound and held in the ordinary way. The usual lithotomy knife, like a scalpel in a strong handle, is to be held in the right hand with its cutting edge directly upward; the point is then to be introduced into the skin on the right side of the perineum midway between the anus and the tuberosity of the ischium, and a little lower than the anus. It may be inserted a quarter or a half an inch deep; and, by a pushing or gliding movement upward, the right side or end of the semilunar incision is made, then the curve, and then the slope on the left. During the movement the knife is gradually turned round with the hand, whose radial margin, from being first turned downward, is ultimately upward. A second similar sweep with the extreme ends not so deep, should next be made, when the fore and middle fingers of the left hand should be pushed into the wound between the bulb and the rectum, with the intention of separating those parts; it will then be found that the anus and rectum can be depressed with peculiar facility. Now, too, with possibly a touch or two in the middle part of the wound, it will be found that the finger readily slips into the space between the erector penis and compressor urethræ; and the staff may be felt through the tissues between them and the membranous portion of the urethra. By a dexterous push, the point of the knife may be pushed into the groove, or perhaps a little further cutting may be used to divide a portion of the lower margin of the triangular ligament and part of the levator ani, or these may be divided in withdrawing the knife. The point of the blade should be pushed along, say, one-half of the membranous portion of the urethra, into the prostatic portion, so as to notch or cut freely the left lobe of this organ, or the latter may be done in withdrawal. Should the gorget be preferred, it may be used after the opening has been made in the membranous portion. The subsequent steps are the same as in the ordinary lateral operation, excepting that the forceps may be held more to the right, and withdrawn through the middle of the perineum, instead of the left side, as in the common way. Should the stone be large, the right side of the prostate can be more readily reached through this wound than through the lateral, and the good rule of pulling obliquely downward in extracting, can be more efficiently accomplished than through a wound of the side.

Sir William Fergusson has tried this procedure in four cases, the ages of the patients having been respectively six, forty-eight, fifty-nine, and sixty-four years. All recovered; and the only drawback appears to have been that the wound healed more slowly than is common after the lateral operation.

Mr. JOHN E. ERICHSEN, senior surgeon of University College Hospital, London, communicates (*Lancet*, January 11th, 1868, p. 40) a case in which he removed successfully a large calculus by the bilateral method of Dupuytren, the grooved rectangular staff having been substituted for the ordinary curved staff, and the section of the prostate having been made by the double lithotome caché. While

he agrees in the main with the questions broached by Sir William Fergusson, and regards the transverse crescentic incision as preferable to the perpendicular external cut of Civiale and Allaston, he differs from him in his estimate of the extent of the division of the prostate, and of his mode of making it. He says:

To my mind the double cut appears the preferable method, as by it an equal extent of incision can be made in the prostate with less danger of passing beyond its limits. Supposé, for the sake of argument, that to extract a calculus it is desirable to make a cut eight lines long into the prostate. If one lobe only is incised, the cut must go to the full extent in it. If both lobes are cut, only four lines need be divided in each of them; and so proportionately to any extent. As the whole under-surface of the prostate is exposed by the transverse external cut, it is as easy to divide both lobes as one. This may be done with the scalpel, and, in such dexterous hands as those of Sir William Fergusson, with perfect safety; but for a less expert master of our art, I think the lithotome caché a safer instrument, as by it the extent of the incision can, without possibility of error, be regulated to a hair's breadth.

There is one practical point in all these mesial operations of lithotomy—whether Allaston's, Civiale's, or Dupuytren's—which I consider of some little importance. It is the use of the rectangular in preference to the ordinary curved staff. I have now used it several times in Allaston's and Civiale's, and look upon it as possessing three very decided advantages over the curved staff. The first is, that its angle can be placed directly in the membranous part of the urethra, and held there until the knife enters its groove. Thus it becomes an unerring guide to the exact part of the urinary canal that we wish to open. The second advantage is, that it carries the urethra away from, instead of, as the curved staff does, down against the rectum. And the third is, that from the angle onward the course of the groove is straight and direct, so that the back of the lithotome or the point of the scalpel is carried on in a straight instead of a curved direction.

Sir HENRY THOMPSON (*Lancet*, January 25th, 1868, p. 132), agrees with Mr. Erichsen in the propriety of dividing both prostatic lobes, in order to obtain room for a large stone. He has now practised the original operation of Dupuytren in eleven cases, with satisfactory results, on the grounds that the internal opening in median lithotomy is insufficient for any stone above a moderate size (and such are almost always crushed), and that the internal opening in lateral lithotomy is less safe than that made by the lithotome caché.

Report of a Case of Median Lithotomy.

Dr. CHARLES C. LEE, of New York, says (*New York Medical Record*, May 1st, 1868), I am induced to offer the following case for publication as an additional contribution to the value of median lithotomy in the young subject. The patient, a thin, delicate boy, æt. 10 years, when three years old had symptoms of stone, which were soon followed by complete retention of urine; his medical attendants relieved the retention, but advised against interference with the calculus, hoping, perhaps, it would be passed per urethram. This never occurred, and the calculous symptoms persisted, the retention being followed by partial incontinence of urine, and the child growing up thin and delicate, though never confined to his bed. Examination revealed a stone at the base of the bladder. The urine was normal

in sp. gr., and scanty, depositing no ropy sediment, but a precipitate of pus and blood corpuscles in limited quantity, and a large excess of uric acid crystals. The boy was ordered ferruginous tonics and cod-liver oil for two weeks, when he was prepared for the operation; and with the assistance of Drs. Humphreys, Raborg, and Dougherty, median lithotomy was performed, as proposed by Mr. Allaston, and modified by Dr. Markoe. I selected this method partly because the patient had so narrow a perineum as to preclude the lateral operation, and partly from the great advantages claimed for it by Dr. Markoe. When the membranous urethra had been laid open in the manner described by Allaston, a probe-pointed director, devised by Dr. Little, was passed down the groove of the staff, and between the two the prostate was cautiously dilated with the finger. The stone was readily found, and proved to be about the size of a hickory nut; had it been too large to admit of ready extraction, I was prepared to crush it *in situ* with a strong pair of straight forceps, rather than deviate from the steps of the operation, by incising the prostate. Its withdrawal was slowly effected, and after washing out the bladder, the patient was removed to bed, having lost not more than a teaspoonful of blood. The boy reacted well from the ether,—a source of more concern than any step of the operation,—and during the next day he passed most of his urine through the urethra. No untoward symptom ensued. The upper half of the wound healed by first intention, and on the ninth day the boy was allowed to sit up. In view of the facility of the operation, and its remarkable freedom from hemorrhage, unless the bulb be wounded, which need never occur with ordinary care, I confess I should prefer it to the lateral method, in any case similar to the foregoing. But it may well be doubted whether, as Mr. Allaston believes, it is destined to supplant the lateral operation in general practice, not having yielded in other, and skilled hands, the ratio of cures quoted by Mr. Allaston and Dr. Markoe.

Four Successful Operations upon the same Individual for Urinary Calculus.

Within the past eleven years, Professor J. C. HUGHES, of Keokuk (*Iowa Medical Journal*, January, 1868, p. 47), has practised bilateral lithotomy four times upon the same patient, and it is believed to be the only instance of the kind on record. The first operation was performed in February, 1855, when the subject of it was sixty-two years of age. Two ammoniaco-magnesian calculi were removed, and recovery was complete in one month. Twenty-one months subsequently, one calculus of the same variety as the former was removed, and the wound had closed on the twelfth day. After the lapse of thirteen months, a third operation was performed, and four phosphatic calculi were extracted. The cure was more tedious than in former operations. In April, 1860, in twenty-six months after the third operation, twelve calculi were removed, and the wound had healed in twelve days.

Professor Hughes ascribes the rapid recovery from so frequent operations not only to the constitutional vigor and indomitable will of his patient, but also to the mode of operation, which he regards as more safe and more easily performed than the lateral method. He has now performed bilateral lithotomy in twenty-one cases, with the very gratifying result of only one death.

Operations for Urinary Calculi, with Statistics, etc.

Dr. GREENSVILLE DOWELL, of Galveston, Texas, Professor of Surgery in the Galveston Medical College (*Galveston Medical Journal*, March and April, 1868), in an interesting review of this subject, says, the primary cause of urinary calculi is some form of dyspepsia, or derangement of the organs of assimilation. The use of limestone water also greatly increases the liability to the disease, as is proven by the greater frequency of its occurrence in the states of Kentucky, Tennessee, Illinois, and Indiana, where the water is limestone, and taken from wells. The deaths in these states, during the year 1867, were, from stone, one in every 550, whilst throughout the whole United States they were only one in every 5000. The Doctor goes on to give the different operations for the relief of stone, describing the various instruments used, giving a new one invented by Dr. Goodwin, of Galveston. He then takes up the causes of death, and winds up with some valuable statistical tables of Mr. C. Williams, House Surgeon to the Norfolk and Norwich Hospital. The comparison of an equal number of cases from these statistics, of lateral and median lithotomy, results very unfavorably for the latter operation,—the deaths in 44 cases of each being, from the lateral 2, from the median 11. The average length of time of treatment in the cases of cure after lateral lithotomy, was 37 days; after median, was 30 days.

Lithotripsy.

Dr. STILLING, of Cassel, reports a case of lithotripsy in the *Deutsche Klinik* for May 9th, 1868, in which the operation had to be repeated at twenty different sittings, at intervals from July to December, before the cure was complete.

The operation had been already performed three years previously, but the fragments had not all been removed, and in consequence of this there had accumulated in the bladder a large number of calculi, around the nuclei which were left. The calculi consisted chiefly of urate and phosphate of lime. Six drachms were collected, and Dr. Stilling estimated that at least two more were passed by the patient, and not saved by him. The operations were rendered more difficult by the existence of some enlargement of the prostate gland, and by a slight stricture of the urethra, which was very sensitive. There was also a false passage, in which the sound entered on the first examination of the patient by Dr. Stilling.

Inflammation of the bladder, when it occurred during the progress of the treatment, was counteracted by cups to the loins, by subcutaneous injection of sulphate of morphia, and by the internal administration of chamomile tea and quinia.

Spontaneous Fracture of Urinary Calculi in the Bladder.

In the *British Medical Journal*, January 4th, 1868, p. 3, Mr. SOUTHAM, Surgeon to the Manchester Royal Infirmary, gives an account of three cases of this rare occurrence, of which the following are abstracts:

CASE I.—A boy, fifteen years of age, had been suffering with symptoms of stone for eighteen months, when Mr. Southam attempted lateral lithotomy. The catheter, however, which was introduced for the purpose of injecting fluid into the bladder, could not be passed beyond the prostatic urethra, as the calculus was firmly fixed in that part. The instrument was, therefore, withdrawn; and, with the finger passed into the rectum, and the stone being pressed against the perineum, a portion of it was extracted through an incision three-quarters of an inch in extent,

made into the urethra, in a line with the raphe. The remainder and larger fragment, which was in the bladder, was removed by a pair of long forceps. The case progressed most favorably. The smaller stone, which was situated in the urethra, had the appearance of having been recently broken off from the larger, except that the edges had lost their sharpness. The surface of the larger portion showed that the fracture was not of recent date; for a quantity of triple phosphate was deposited on its broken side, and prevented the two pieces from corresponding with each other. The calculus was composed principally of lithic acid, and its entire weight was six drachms, the smaller fragment weighing seventy grains.

CASE II.—In the case of a boy, seven years of age, the stone consisted of two portions, one formed chiefly of a part of its outer covering, which was also found partially encysted in the prostatic portion of the urethra. It presented, however, no obstacle to the introduction of the catheter or staff; but, during the operation, it obstructed the passage of the knife into the bladder, and had to be removed with the forceps. The second fragment was extracted in the usual way. Notwithstanding the absence of any recent deposit on the smaller fragment, its edges were smooth, and showed that the fracture must have occurred at some remote date. The appearance of the calculus itself confirmed this view; for it was so incased with phosphates that it was difficult to discover where the other portion was originally attached until a section of it had been made. The entire calculus weighed two drachms and fifteen grains; the smaller fragment ten grains.

CASE III.—A man, sixty-four years of age, was admitted into the London Hospital, under the care of Mr. Luke, with the usual symptoms of stone. An attempt was made to crush the calculus, which, however, was so large as to slip once or twice from between the blades of the lithotrite without any apparent effect. Lithotomy was afterwards performed, and a very large (weight not given) soft stone, in the shape of a wedge, having one rounded surface and two smooth facets, was removed, from which it was inferred that there were two more calculi in the bladder. One other stone was extracted, which broke into several pieces in the grasp of the forceps. This, when the fragments were placed in position, corresponded in shape to the first. They were both composed of triple phosphate.

In his remarks upon these cases, Mr. Southam discusses the causes of the fractures, and concludes that they may have taken place through the generation of some gaseous agent, from chemical changes in their earthy constituents, or through the decomposition of the animal mucus of which their cementing material is formed, and which exists in various quantities in different calculi.

Case of Stricture of the Urethra treated by External Division.

Prof. G. E. FENWICK, of Montreal (*Canada Medical Journal*, December, 1867), reports the following interesting case:

Andrew Melville, aged 46, was admitted into the Montreal General Hospital on the 21st October, 1867, suffering from a stricture of old standing. Considering the impermeable nature of the stricture and the constant danger of repeated attacks of urinary infiltration, it was determined to perform perineal section.

Accordingly, on the 15th of November, the patient having been put under the influence of chloroform, a No. 10 catheter was introduced into the urethra as far as the seat of the stricture, and upon this an incision about one-half an inch in length was made. When the extremity of the catheter was thus exposed, search

had to be made for the entrance of the urethra, and in this part of the operation considerable difficulty was experienced, but at length a small probe having been got through the stricture, this was freely divided upon it for the distance of about three-fourths of an inch. The large catheter was then easily passed into the bladder and retained by tapes.

The operation was followed by two or three pretty severe rigors, and on the fifth day by the formation of an abscess in the cellular tissue of the scrotum communicating with the urethra, but which when opened soon healed up.

On the third day the catheter was removed and reintroduced the next day, and again retained for forty-eight hours, at the end of which time it was withdrawn, and afterwards only passed in at first every day, and subsequently every second day.

The wound presented a uniformly healthy appearance, and at the time of discharge is so completely healed that the entire stream of water passes freely by the natural passage.

Discharged cured, November 30th, with an injunction to keep passing a No. 10 catheter himself twice a week for at least twelve months.

On the Permanent Cure of Stricture of the Urethra by the Galvanic Caustery.

Dr. ROBERT D. NESMITH calls attention (*New York Medical Journal*, February, 1868, p. 412), to an operation for the destruction of organic stricture of the urethra, devised by Dr. F. Mallez and Dr. A. Tripier, of Paris. This consists in the use of electrolytic cauterization, through which a rapid cure is effected, and, as it is claimed, the calibre of the urethra is maintained ever afterwards without necessitating a resort to catheterism.

The battery employed by MM. Mallez and Tripier consists of eighteen medium pairs, with the protosulphate of mercury. The urethral electrode consists of a guide, whose extremity closes the terminal opening of an India-rubber catheter, destined to protect the parts which are not to be cauterized. This guide is made of several twisted wires, which terminate in a cylinder that varies in length from eight to fifteen lines.

The surgeon placing himself on the right of the patient, the positive electrode, which consists of a broad carbon button, is fixed, by means of an elastic band, to the internal surface of the left thigh, contact with the skin being prevented by several discs of moistened agaric. The urethral electrode, covered by its protecting catheter, is now carried down to the anterior face of the obstruction, when the circle is closed at the positive electrode. The patient soon experiences a burning sensation at the point undergoing cauterization; but this is slight, and diminishes as the eschar is formed. The guide is then to be gently pushed, so as to maintain its apposition with the stricture, cauterizing in this way both from before backward and laterally. By pushing the catheter over the guide, so as to allow only a small portion of the latter to project, the duration and the depth of the lateral cauterization may be limited at will, that from before backward continuing without interruption. Finally, when the obstruction is destroyed, the catheter passes without difficulty over the terminal button of the guide.

The operation completes the treatment. No subsequent catheterism is needed to maintain the calibre of the urethra; nor is it necessary that the patients be

treated at their residences. One subject succumbed from urethral fever six days after the operation; but the same accident came very near happening to him once before after urethrotomy. In only one case was acute pain complained of; and in a few instances there was trifling hemorrhage.

From a report of thirty successful cases in the hands of MM. Mallex and Tripier, we select the following, as illustrative of the merits of the procedure:

D—, æt. 62, a custom-house officer, was affected with gonorrhœa at the age of twenty, and has micturated with difficulty for the past ten years, and latterly suffered from incontinence of urine. On the 2d of May, 1864, exploration with a conical bougie revealed the existence of a stricture seated at the end of the spongy portion of the urethra. The prostate was hypertrophied. Twenty minutes were fruitlessly employed in efforts to pass a bougie of the diameter of half a line; and, four days subsequently, it was made to enter the bladder. On the 9th, the galvano-chemical cauterly was applied for five minutes. More than three-eighths of an inch of stricture were destroyed; and, immediately after the operation, bougies Nos. 19 and 20, the latter measuring just one-quarter of an inch, were introduced with ease, and without causing the least trace of blood. The patient urinated with a full stream, and afterwards continued to pass his water freely. After the lapse of several months the cure was found to remain permanent.

Radical Cure of Hydrocele.

DR. FRANK H. HAMILTON, of New York, in a clinical lecture at Bellevue Hospital (New York *Medical Gazette*, February 15th, 1868), says, that for some years he has almost entirely abandoned all other operations for the cure of hydrocele, for the one by the "long incision." This method is as follows: With a knife, a long incision is made over nearly the whole length of the sac, into the tunica vaginalis, and the bleeding vessels are carefully secured. A piece of thin muslin is then laid between the lips of the wound, the patient placed in bed, and a poultice applied. Secondary hemorrhage is liable to occur, and must be carefully guarded against. The tent may be removed on the fourth or fifth day. The poultice he considers very important. If the testis falls out after the operation, it can be returned, and if necessary a single stitch taken across the wound to restrain it. In all the operations he has made by this method the cure has been complete in from three to eight weeks, and in no instance has the hydrocele returned. The operation has never endangered life, or been followed by serious consequences.

Expulsion of Large Calculus through Female Urethra.

Prof. BORTI, of Genoa, relates the case (*Gaz. Med. di Torino*) of a woman, 54 years of age, who, having suffered for several years from symptoms of stone, spontaneously expelled an enormous calculus in October, 1867. At the time of its expulsion it weighed six ounces, and was still 65 grammes in weight four months after, measuring 76 millimetres in length, and 40 in breadth. No ill consequence followed the great dilatation of the urethra required for its passage, as two days after the expulsion the patient was enabled to retain or pass her urine at will. He believes this case is corroborative of the propriety of the practice insisted upon by Prof. Borelli, of Turin, of substituting rapid, yet progressive dilatation of the urethra, for cystotomy in females.

VII. DISEASES OF THE SKIN.

Contributions to Dermatology.

A series of articles under the above caption have appeared, from time to time, in the *Boston Medical and Surgical Journal*, from the pen of SILAS DURKEE, M.D., of Boston, the author of a treatise on "Gonorrhœa and Syphilis."

ECTHYMA—ACUTE AND CHRONIC.—This affection of the skin, Dr. Durkee states, is characterized by large and prominent pustules, generally but few in number, and having a hard base, with a dull-red areola. They appear in successive crops on different parts of the body, but most frequently on the extremities, shoulders, and buttocks. They are usually discrete, sometimes, however, arising in the immediate vicinity of each other, they coalesce. At maturity they dry up into thick, brown, and adhering scabs, which, on removal, leave behind them superficial cicatrices, or dark red stains, which remain for several weeks.

Rupia, he regards as nearly allied to ecthyma. Hardy and other dermatologists consider the two eruptions as in reality but one; both spring from the same cause, i.e., an impoverished state of the blood, and consequently debility of the economy, pursue a similar course, and require similar treatment.

Ecthyma is usually partial and successive, in some instances general in its invasion; its duration is uncertain, sometimes continuing but ten or twelve days, at other times enduring many months. The four varieties of Willan, viz., *Ecthyma vulgare*, *E. infantile*, *E. luridum*, and *E. cachecticum*, he thinks, can with propriety be described under two types or forms, that is, *acute* and *chronic* ecthyma.

Acute ecthyma, in its invasion, usually presents the ordinary symptoms of an acute affection,—slight febrile disturbance, and sore throat for three or four days, occasionally announce the development of the pustules. These commence with a sense of pain, heat and burning in the part, followed by the appearance of small red points, raised one or two lines above the surrounding skin, with hard, indurated bases, and well-marked and vivid areolæ. In three or four days purulent matter is formed, and the pustule varies in size from that of a pea to a marble at the base; when fresh formed they are like "blind boils." If the eruption is copious, and covers much surface, severe irritation is provoked, neighboring glands and lymphatic vessels become inflamed, and abscesses form. In aged people, it frequently passes suddenly from its simplest type to a much severer form, and a gangrenous condition of the affected locality supervenes (*ecthyma gangrænosum*). Sloughs form in the centre of the diseased mass very rapidly, an intractable ulcer is established, and the local disturbance soon involves the whole system, and the patient dies suddenly. Sometimes the purulent deposit is removed by absorption, and the skin is restored to its natural condition after repeated desquamation. The deductions of M. Rayer are given as follows: A careful examination of the pustules of ecthyma shows: 1. That in the first stage (red elevations), there is merely a sanguineous injection with a pyriform tumefaction of the epidermis. 2. That in the second there is deposited upon the summit of these elevations, rarely upon the whole surface, and under the epidermis, a certain quantity of purulent serum. 3. That in the third, which supervenes soon after, there is deposited a quasi-pseudo-membranous substance in the centre of the elevation, which is evidently perforated. 4. That after the escape of this matter and the removal of the epidermis, the pus-

tule appears in the form of a small cup-shaped cavity, surrounded by a hard and thick edge. 5. On the following days this thickened margin subsides, at the same time a slight cicatrix is formed beneath the crust, the centre of which is fixed within the point where the perforation was observed.

Chronic Ecthyma.—This variety of ecthyma is more frequently met with than the acute, and is the form designated by Willan, *ecthyma infantile*. Children exposed to the malign influences of insuflcient nourishment and unhealthy atmospheres, aged people, and debilitated subjects, are commonly sufferers from this affection. The pustules, like those of the acute form, vary in size; the crusts are dark, the ulceration is sanious and yields a fœtid and unhealthy pus. In elderly persons, and in those broken down by improper living, the pustules are generally numerous, and extremely slow in reaching maturity. They are surrounded by a great extent of diffuse inflammation, and contain a sanguinolent curdy fluid rather than pus, which escapes from its confinement in ten or twelve days. The subcutaneous cellular tissue is involved, and a good deal of febrile action is developed. The eruption then bears a close resemblance to the bullæ of rupia.

Causes.—The following are enumerated as the causes of the eruption: Bad nursing, bad air, or any long-continued, irritating applications to the skin,—these exist as permanent causes in children. In adults, over-exertion, fatigue, privation, debility, and certain occupations—for example, that of bricklayers, grocers, butchers—and excesses of various kinds, are all conducive to the occurrence of ecthyma. The eruption occurs frequently as the sequela of small-pox, measles, and scarlatina, and last, but not least, syphilis, either hereditary or acquired.

Diagnosis.—The diagnosis of ecthyma rarely presents any difficulties. The large size, prominence, and hard base of the pustules, and their isolation, are usually sufficient to distinguish them from the small, non-indurated, flattened pustules of impetigo, which are superficial, more or less confluent, and yield a greater amount of viscid, purulent matter, and the incrustations produced by them are soft, thin, semi-transparent, honey-like, or yellowish. The hard, tubercle-like elevations, without areolæ, of acne and sycosis, distinguish them from the pustules of ecthyma, which have broader bases and areolæ.

If the eruption is due to a syphilitic cause, it is usually of a more chronic character; the areola is less marked or none at all, a coppery stain is often detected, and the scab is very dark, with circular markings.

Prognosis.—Owing to the fact that an impaired state of the constitution generally attends the development of ecthyma, the prognosis is of a grave character.

Treatment.—As the complaint is one of debility, all measures of treatment, both local and constitutional, must be of a tonic character. The condition of the primæ viæ must be considered as of first importance. The bowels should be moved by a mild purgative, and a free eliminative action be maintained in them. In all other respects the cause should be essentially hygienic during the continuance of the affection,—salubrious air, cleanliness, and a generous diet. If the patient is an infant, a sufficient quantity of good milk from a wet-nurse or the cow is the only nourishment required. If constitutional remedial agents are deemed necessary, the syrup of the iodide of iron in doses suited to the age will be one of the best. Fowler's arsenical solution, to the amount of one or two drops each day, may also be administered in the wine of iron and simple syrup. The eruption will disappear as the child's general condition improves.

If the malady is of a chronic type, and due to a syphilitic cause, the bichloride

of mercury and iodide of potassium are demanded, the first for its tonic as well as its specific effect.

The local treatment should consist of medicated baths, and stimulating applications to the surface of the atonic ulcers. For the first, three or four ounces of carbonate of soda, to twenty-five or thirty gallons of warm water, provides an efficient bath, which the patient should employ daily. When the crusts are cast off, the ulcers should be treated with a saturated solution of sulphate of copper; the surfaces touched once or twice every twenty-four hours, by means of a soft rag-mop. The acetate of lead ointment, the benzoated oxide of zinc ointment, or a saturated solution of nitrate of potash, may also be employed with benefit.

Additional measures are required in the chronic variety. The mineral acids are important; the nitro-muriatic acid is the best. The tincture of the muriate of iron and cod-liver oil are also of great value.

Where a venereal taint is present, the iodide of potassium and other remedies should be employed, as in the treatment of constitutional syphilis.

The local treatment is substantially the same as in the acute form. In obstinate cases, weak nitric oxide of mercury ointment, or the unguent. hydrarg. nitratis, diluted with simple ointment, may be employed with benefit.

RUPIA AND ITS TREATMENT.—As alluded to in the article upon Ecthyma, he regards this cutaneous affection as nearly related to the former, careful study of the two maladies discovering an intimate pathological alliance between them. There are a few points which deserve consideration as exclusively pertinent to rupia, of which there are two varieties,—*rupia simplex* and *rupia prominens*; the first, the simplest form of the eruption, commences by the development of a bulla or tubercle, which varies in size, and is filled with a nearly transparent, serous fluid, which very soon loses its hyaline character by being mixed with sanious or purulent matter; concretions take place, and a thick, dark-brown and rough crust is formed, which adheres to the derma for an indefinite period, unless removed by artificial means. On removal, it exposes a foul and deep ulcer. In young children the legs, arms and the scalp are the situations usually occupied by the eruption. At this period of life it produces severe constitutional disturbance. It sometimes follows attacks of scarlet fever, or typhus fever, or other exhausting diseases. In some cases there is only one single specimen, as upon the nose, or the chin, or upon the knee-joint. In most instances the eruption appears in clusters, and in successive crops, covering spaces of varying size.

Suppuration of the tubercle sometimes occurs in a few days; at other times it is delayed for weeks and months, as if the morbid process was at rest. Usually very little pain is experienced, and the periosteum and bone escape invasion, unless the ulcer is situated upon the scalp or front of the tibia. When the disease attacks the nose, it occasionally destroys a considerable portion of the alæ and adjacent parts before the full extent of the mischief is suspected. Hemorrhage is liable to follow the dressing of the ulcers after the removal of the incrustations, unless this is done in the most delicate manner.

The discharge is rarely pure pus, but an admixture of sero-sanguinolent fluid, with more or less purulent matter. The drying up of these secretions forms new incrustations, and thus a succession of crusts may be kept up for a long time. These crusts are thicker in the middle than at the circumference, and, when large, they have not inaptly been compared to an oyster-shell or limpet-shell. When the

ulcers finally heal they leave behind a dark-brown stain, or lividity of the skin, which remains for many months before it is entirely effaced.

Rupia prominens is distinguished from the simple variety by the fact that the crusts are particularly large, well-marked, conical, and prominent, as the name sufficiently indicates; the tubercles are, in a majority of subjects, few in number, and are developed upon the face, trunk, and extremities. The crusts increase in size by the process of accretion, which takes place at the base, in consequence of the slow successive effusions of the bloody sero-purulent matter, which raises the cuticle and desiccates in concentric layers or rings, and thus the incrustation augments, both in circumference and length, so that the portion which was at first the base of the cone becomes at last its apex. The cone itself is hollow. The eruption varies as to its location and extent. Sometimes it is confined to one locality, as the forehead, the inner aspect of the knees, or the thighs immediately above the knees, the wrists, or about the elbow-joints. In other instances, and where the pyogenic diathesis has existed for a long period, these formations arise in great profusion, and cover almost the entire body. In cases of protracted disease, especially constitutional syphilis, the eruption is often found in every stage of development, just beginning, at maturity, and on the decline. The diagnosis of rupia is rarely attended with any difficulty. As has been seen, it sustains a close resemblance to Ecthyma, and to no other cutaneous affection. No practical disadvantage can arise from an error of diagnosis, as the treatment is the same for both. The cause is great constitutional debility, and in a great majority of cases this debility is the result of constitutional syphilis.

Treatment.—In all forms and stages of the disease the constitutional treatment is of the greatest importance. As debility is a predominant symptom, tonics and the most favorable hygienic conditions are requisite. The syrup of the iodide of iron, the tincture of the chloride of iron in syrup of ginger and water, the iodide of potassium, quinine, and cod-liver oil, embrace a list of useful remedial agents, whilst nutritious food, warm clothing, good air, and cleanliness, are not to be forgotten.

The removal of the scabs is the first step toward local treatment. Poultices, fomentations, and warm alkaline baths will accomplish this. Stimulating applications must be applied at once to the exposed surfaces. These may consist either of lotions or ointments. Of the former, the black wash, the yellow wash, a solution of chlorate of potash of varied strength, a solution of tartrate of iron and potassium, six or eight grains to the ounce of water, may be used. If these fail, the ulcer may be touched lightly every day, by means of a soft camel's-hair brush, with a solution of hydrarg. pernitrat. 3ss., to aq. fontanæ, ℥ij. A saturated solution of nitrate of potash may be used twice a day, covering the ulcer afterward with an ointment of the nitric oxide of mercury,—℥j to 3j of simple cerate. No ointment is superior to this for general use. A slight sprinkling of pulverized chlorate of potash, or of cream of tartar, is sometimes beneficial in promoting healthy granulations.

LUPUS.—Dr. DURKEE examines into the causes and pathology of this affection, and the means best adapted for its treatment. The name is derived from the Latin word, *lupus*, signifying a wolf, and was chosen, in accordance with the system of nomenclature adopted by the ancient writers, to designate the destructive nature of the disease. It is confined to no age, sex, or class of subjects, and des-

pite the fact that it may exist for many years as a local affection, the general health usually remains unimpaired. He recognizes three principal varieties, viz., Lupus erythematodes, Lupus non-exedens, and Lupus exedens, regarding the other forms mentioned by authors as merely different stages of the same disease.

In the first variety there is an erythematous condition of the skin, followed by loss of substance, or atrophy of the affected part, without the formation of tubercles or ulceration.

In the second variety there is a development of tubercles, followed by destruction of tissues, without ulceration.

In the third, there is the formation of tubercles, and subsequent loss or destruction of the skin, and sometimes of the deeper tissues also, by ulceration.

These are the destructive features of the several forms of lupus. In each there is a devastating agency at work, although there is a diversity in the mode of operation. The disease is never contagious, and rarely traceable to hereditary predisposition. Constitutional symptoms and pain are rarely present. The face, and especially the nose, is the most frequent locality for its development, although it may attack other parts at the same time, as the ears, cheeks, forehead, upper lip, and sometimes the mucous lining of the mouth and nose. In a few weeks, or perhaps months, a thin, white, delicate scale forms on the diseased surface, as in psoriasis. Although very adherent, it desquamates every now and then in the form of a horny layer.

In the erythematous form, when the morbid action has continued for a long period, the diseased integument is atrophied, puckered, and depressed, and is much thinner than natural, on account of interstitial absorption, and not by open ulceration. If the fingers are the parts involved, the skin becomes reduced to a white, hard, and horny covering, which is drawn tightly around the bone; the surface is bloodless, and polished as Parian marble.

When the disease attacks the nose or cheeks, the inflammation, induration, and hypertrophy of the affected part produce great deformity. The tubercles occasion a sort of knobby or lobulated appearance. If the nose be the unfortunate organ on which the malady plants itself, it looks sharpened, or notched, as if the soft parts had been pinched or irregularly pared off, the bones and cartilage become prominent, and a remarkable cicatrix and deformity remain, which no surgical operation can repair.

Lupus Non-exedens.—This generally commences at an early period of life, and is usually represented by the development of a few distinct tubercles, varying in size from a pin's head to that of a pea; they are slightly flattened on their summits, somewhat elastic and boggy to the touch, and if pressed or broken with a probe, or otherwise disturbed, they readily bleed. They often remain dormant for a long period; when aroused into action by some inappreciable cause, they multiply in number, and by their aggregation they form a well-defined patch of a pale, dull-red or mottled color, of various extent, and circular, oval, or tortuous in outline. At length the patch is covered with scales or crusts, somewhat like those seen in eczema. They are adherent in their centre to the summit of the tubercles or nodules, while their edges are free and curled up; cuticular desquamation takes place, and is renewed at different intervals.

The disease seems to have a preference for some part of the face, the nose being the most frequent habitat; sometimes the upper lip; rarely the lower. When the disease attacks the integument of the ossa nasi, it extends in all directions, and

finally involves the entire surrounding structures, producing the most unique and hideous deformity. Nearly the whole of the cheeks, lips, and chin is sooner or later covered with a succession of fresh tubercles, which run together, and the patient looks as if his face was covered with a mask.

Lupus Exedens.—This form of lupus is more frequently met with than any other. It commences by the development of one or more tubercular masses, which are characterized by greater hardness or density in their structure, and less transparency than are present in those of lupus non-exedens. Their tendency to ulceration becomes apparent at an early day, and progresses with marked activity in many instances, while in other cases its march is very slow. When the former tendency prevails, and the complaint attacks the nose, this organ is sometimes entirely destroyed in four or five weeks. The soft parts, the cartilaginous structures, and sometimes the osseous, are swept away by this peculiar process of destruction, in spite of all efforts to arrest its voracity. Other parts may be attacked at the same time, and yield to the same destructive process.

When suppuration takes place in the tubercles of lupus exedens, they soon become covered with a thin greenish-brown scab. The removal of this scab discloses an excavated ulcer, the surface of which is ragged, the edges thick and red, covered with a white exudation of lymph, and with small, unhealthy granulations. A renewal of the scab occurs by the drying up of the semi-purulent or fetid, ichorous matter poured out upon the diseased surface.

However severe and extensive the ravages of lupus exedens may be, it is seldom that any pain is experienced during the whole course of the malady, and in this respect, as well as in many others, it resembles constitutional syphilis. Sometimes there is itching in the part, and in sudden changes of the weather the patient experiences a temporary uneasiness, but scarcely amounting to absolute pain. When an ulcer heals, the resulting cicatrix is of a pearly white, with streaks of a faint purplish tint, and corrugated bands running over it. It is no uncommon event for the disease to manifest itself at some future day at some point within or near the boundaries of this cicatrix whatever treatment may have been adopted.

The consequences of lupus exedens vary with the part on which it is situated, and the period at which it is subdued by treatment. If cured early, but slight blemishes remain; these are rare compared with the frightful deformities which the malady generally produces, especially if of a syphilitic origin.

The diagnosis of lupus is easy. The tubercles, which are its earliest representatives, are of a livid, dull-red color, pursue an indolent course, and are usually confined to one spot, or district, as the nose, lips, cheeks, ears, etc. Sometimes it commences as a single tubercle. At a variable period ulceration occurs; this ulcerative process soon spreads beyond the limits of the original tubercles. Slight, scaly crusts are formed. The complaint is unaccompanied by any constitutional symptoms of the slightest importance. These are pathognomonic features.

Pathology.—A new formation of connective tissue constitutes the essence of the disease, at first limited in extent, and accompanied with injection of the vessels and tumefaction. It gradually extends, and produces a consecutive atrophy of the organs in which it spreads. In the *cutis* the hair falls out, and the sebaceous glands and *papillæ* shrink. In this atrophied condition, the skin is ultimately perforated by the new growths. The new formation of connective tissue may also extend into the adipose and muscular tissues, or so far, even, as to affect the

bones themselves, and to interfere with the nutrition of the elementary organs. The new connective tissue may suffer involution in many places, where the conditions for its further development are wanting, but it is not subject to any genuine or spontaneous, retrograde metamorphosis, accompanied by softening of the new formed substance. The *pus* which is so commonly formed in *lupus*, should not be regarded as a product of the breaking up of the newly organized substance, or of the normal elements of the tissue, but a new formation out of a *blastema* which is associated with the new formation of connective tissue.

Cause.—Dr. Durkee regards syphilis as the most frequent cause of this complaint. In some instances no venereal taint can be traced. Scrofula is named by various authors as the parent of lupus. Dr. D. states, that if we admit its agency, we must do so on a purely hypothetical basis. Lupus is much more common in men than in women, and the influence of sex and age is very marked as among the predisposing causes of the several varieties of lupus. Of 170 cases quoted, 131 were males and 39 females. In lupus exedens the ratio is 5 to 1 between the two sexes, and higher yet in the two other varieties.

Slight injuries have been known to be the immediate cause of the disease, as a blow, scratch, a spark of hot cinders, etc.

It is also seldom found in the upper classes of society; this immunity is supposed to be due to the better quality of food, better air, and greater cleanliness.

The *Prognosis* is not always satisfactory, depending in a great measure upon the duration of the disease. Even when a cure is accomplished, the disease is liable to reappear at some future day.

Treatment.—This must be pursued upon general principles. As the general health rarely suffers from any variety of lupus, except it be associated with constitutional syphilis, our treatment must be directed to the elimination of this poison by proper anti-syphilitic remedies.

Dr. Durkee expresses a want of confidence in arsenical preparations, which have had some reputation in the treatment of lupus. He also thinks that few patients can endure for any length of time, the administration of Donovan's solution in the doses (10 to 15 drops t. d.) recommended by Mr. Wilson. He prefers the bichloride of mercury in very small doses, the tenth of a grain, morning and evening, at meals. Cod-liver oil is now quite popular as a remedy, in doses varying from an ounce to a pint, according to the views of different surgeons.

Nitric acid, nitro-muriatic acid, the various chalybeates, the iodide of potassium, the chloride and carbonate of ammonia, and an unlimited number of mineral waters, all have their advocates. Whatever constitutional treatment is adopted, the patient should always be under the best hygienic conditions.

The local treatment must be our main reliance, and, in a majority of cases, this must be persevered in long and patiently.

In erythematous lupus, if the efflorescence is quite limited, one of the best applications to commence with is a compound tincture of iodine of the following strength:

[illegible]

The application of this, twice daily, by means of a camel's-hair pencil, to the part, will in a few days completely remove the cuticle. The raw surfaces should

then be dressed with lint saturated in liquor plumbi diluted with an equal quantity of water. Nitric acid very much diluted may be used instead of the lead-water. When there is much smarting or burning, as generally occurs toward evening, the following lotion will be found beneficial:

R. Sodæ Sub-heratis, ʒij.
Acidî hydrocyanicî diluti, fʒij. M.

Rags saturated with this may be applied to the lupoid surface. The benzoated oxide of zinc ointment, with three grains of sulphate of morphia to the ounce, will be found useful and agreeable.

If the scales are very thick and adherent, they can be detached readily by means of a strong solution of potassa fusa, or the carbonate of soda.

If other local means are required, the iodide of sulphur ointment fifteen grains to the ounce of rose ointment; the iodide of mercury ointment, one scruple to the ounce, may be applied every day or every other day, or the iodide of lead ointment, one drachm to the ounce; this may be applied constantly.

A Case of Favus upon the Body and Limbs.

The *St. Louis Medical and Surgical Journal*, January, 1868, contains an account of a very interesting case of this disease, coming under the observation of Professor E. H. Gregory, accompanied with remarks upon the nature and microscopical features of the eruption, by G. Baumgarten, M.D., of St. Louis. The rare occurrence, and in this instance, the excessive development, combined with the fact that neither treatment nor acts of personal cleanliness had interfered with its course, renders this case one of extreme interest, as furnishing an example of the natural history of the disease. The history given by Professor Gregory is as follows:

"J. M. S., an exceedingly fragile youth, aged seventeen, a native of Stoddard County, Missouri, a good type of the strumous diathesis, presented himself at the Sisters' Hospital, about the last week in September. He was stunted in body and mind, not larger nor smarter than boys of ten years, about which age he became the subject of the distemper which we propose to describe.

"His head was encased—there being little hair—in a multitude of crusts, several lines in thickness, very dry, and of a dirty white or yellowish color. The disease was confined to this part for more than five years, but for a year past had extended until it had distributed itself over the entire body, where the appearance of the eruption was so curious as to suggest the idea that the boy had been exposed to a shower of somewhat consistent mortar, the falling masses about the size of an ordinary nutmeg, some of the drops (the most recent crusts) maintaining a conical shape, rising to the height of a half or three-fourths of an inch, and measuring more at their base. Others were spread out as large as a half dollar, and seemingly so warped and cracked in the drying process as to make it possible to insinuate the finger-nail under their borders. The crusts were easily detached without pain or hemorrhage, and rested upon the true skin, which was slightly depressed and moist, and of a dark-brown color. In the beginning, as we watched the initial steps, the crust was a mere point, not larger than a pin-head, and about the color, augmenting in size by accretion and amalgamation with contiguous points. The

earliest point was perfectly dry, as was the completed crust, there being no serum or pus from beginning to end."

Dr. Baumgarten remarks that the character of the eruption covering the scalp at once pronounced the disease "*tinea favosa*," although the enormous development of the mortar-like masses upon other portions of the body detracted the attention from the head. The face, neck, hands and feet were entirely free from the disease, while the back, arms and legs were thickly studded with crusts. The pigmented spots upon the front of the trunk gave evidence of the previous great extent of the disease. A wood-cut (after a photograph), representing the right arm of the boy, is given, which affords a good idea of the appearance of all the affected parts.

The diagnosis "*favus*" was easily verified by the microscope. He found the entire mass of these large crusts composed of the spores and thalli of the fungus of *favus*, *Achorion Schoenleinii*, with but little admixture of epithelial scales. The latter occur mostly in clumps around a hair, and do not usually appear as the dried horny scales of the outermost layer of the cuticle, but are well-characterized, flat, nucleated cells of oval outline, derived from deeper layers. The fungous masses consist mostly of oval (and some round) spores, measuring .004-.005 mm. transversely, and .005-.007 mm. in their long diameter, and of beaded threads of about the same breadth, rarely budding. (A drawing is given representing the spores thus described.) Besides these, there are some mycelial filaments of much greater length, but seldom more than .003 mm. broad, some of which are segmented and branching, others without septa, and many containing spores. (A drawing represents these mycelial filaments.) These are the only signs of reproduction recognizable in the scabs. No true heads of fructification could be found.

The Doctor here alludes to a case, the history of which he obtained from Dr. Engelmann, in which the disease manifested itself upon the face and arms, was transmitted to the patient from his wife, and the eruption was of the character described by authors as belonging usually to *favus*, *tinea favosa*, or *porrigo favosa*. In this respect (the difference in character of the eruption), as well as in the absence of certain microscopical features (mycelial threads), the case differed from the one under consideration. The presence of the mycelial threads indicates a more advanced stage of development, and hence they would be expected in the larger masses and more luxuriant vegetations. Their absence in the case quoted may likewise be due to the more direct and constant exposure of thin crusts to the acid secretion of the skin, which has been shown to be unfavorable to the development of what may be called the higher form of the fungus.

Dr. Baumgarten adds a few remarks concerning the late researches of mycologists, and the opinion of authors as to the unity and identity of most or all of the epiphytes of the human body. In conclusion, he states that we may consider it as well established, that most of the vegetable parasites of the cutaneous surface are, as Hebra correctly surmised, very common fungi, well known in various forms and stages of development outside of the human body, which are compelled, by the conditions of the given soil, to maintain a certain form, or stage of their vegetation, and to multiply in a confined circle of reproductive metamorphoses without true fructification.

Herpes of the Vulva.

In the *St. Louis Medical Reporter*, December 15th, 1867, we find an article upon

this subject, translated from the French of Dr. F. L. Legendre. The diseases with which herpes of the vulva is liable to be confounded, and the points of differential diagnosis, are thus summed up. The diseases are: 1st. Commencing vegetations, when they have a rounded form. 2d. Hypertrophy of the sebaceous follicles. 3d. Primitive non-indurated chancres. 4th. Mucous tubercles. The error of diagnosis most likely to be made, and most carefully to be avoided, is that in reference to herpes of the vulva and primitive non-indurated chancres. The fact, that when the vesicles of herpes have ruptured, the ulcerations which succeed very closely resemble primitive non-indurated chancre, renders the diagnosis somewhat difficult, and demands close observance of the characters, which enables us to distinguish them. The ulcerations which follow herpes should be recognized by the following characters: 1st. By their superficiality. 2d. By the grayish appearance at the bottom. 3d. By their multiplicity in general. 4th. By the concomitance of several vesicles, isolated or grouped. 5th. By the rapidity of their cure. 6th. By the absence of virulence. This last characteristic feature furnishes the crucial test in determining the diagnosis. If any doubt exists as to the specific or non-specific character of the ulceration, it will only be necessary, in order to clear this up, to observe the results obtained by inoculation. In the case of herpetic ulceration, no result is produced.

The prognosis is favorable, depending in some measure, however, as regards a speedy cure, upon the cause of the affection. If appearing at the approach of, or during the menstrual period, as a result either of venereal excess, or of uncleanness, or after excessive exercise, the cause being easy of removal, the herpes disappears rapidly. If developed under the influence of some internal disease, or from a purulent discharge from the vagina, the disease is frequently maintained for a long time, and readily renewed.

The treatment consists in attention to cleanliness, rest, avoidance of irritation, by means of scratching or rubbing the parts; frequent ablutions with some cold aromatic infusion, unless during the menstrual period, when the lotions should be warm. If ulceration occur, soothing applications should be employed,—warm water, bran baths, every other day, the constant use of emollient poultices directly to the parts, and renewed often. If the ulcers do not yield to the above treatment, the application of the nitrate of silver will diminish their sensibility and assist in their cure. Rest, cooling drinks, and a low diet will complete the general treatment.

VIII. GONORRHOEA AND SYPHILIS.

Gonorrhœal Rheumatism.

In the *Canada Medical Journal*, December, 1867, p. 282, is a translation from the *Archives Générales de Médecine*, by Dr. PARVIN, the editor of the *Western Journal of Medicine*, calling attention to the importance of this affection.

Fournier believed in the specific nature of blennorrhagic rheumatism, holding also that it is not only the occasional cause of rheumatism, but the direct, efficient cause, and that the disease produced presents certain features which distinguish it clearly from simple rheumatism. The symptoms of gonorrhœal rheumatism

offer broad differences. It is most commonly apyretic, and not attended with the profound depression frequently seen in acute rheumatism; also mono-articular quite often; does not delitescence rapidly, as is not uncommon in simple rheumatism; and, finally, the blood does not possess the buffy coat. In addition, also, he states that the complications in the great serous membranes, which simple rheumatism often develops, are exceedingly rare in blennorrhagic rheumatism. Ophthalmia is also present in blennorrhagic rheumatism, as a result of metastasis, which is not the case in simple rheumatism. In fine, the evolution, the duration, and the terminations of the two maladies equally differ.

Syphilization.

In an article in the *St. Louis Medical and Surgical Journal*, January 10th, 1868, Dr. J. Z. HALL combats the statement of a correspondent, S. H. Frazer, "that the treatment of syphilization is dead, since the dualistic theory is a complete refutation of it," and asserts that in order to maintain this statement he must prove that the dualistic theory is true. This theory asserts,

1st. That the chancroid, or venereal virus, has no constitutional effect, and hence would not, by its repetition, or prolonged action, modify or cure constitutional symptoms.

2d. The Hunterian, or indurated chancre, is not auto-inoculable; hence could not be repeated on the same patient; and hence would not serve for the process of syphilization.

Dr. Hall's experience, derived from the treatment of over one hundred cases by the process of syphilization, enables him to disprove the correctness of the dualistic theory, as it bears upon the process of syphilization, and to assert, as the result of his observations for the last ten years, the following propositions:

1st. Syphilis is a zymotic disease; *i. e.*, self-curative, when allowed to complete its own movement.

2d. All its manifestations may be generalized under two forms,—suppurative and non-suppurative,—indurated and non-indurated,—the one may be called active, and the other passive.

3d. Under the head of passive syphilis may be arranged all so-called constitutional manifestations, eruptions, indurated glands, nodes, periostitis, indurated portion of Hunterian or indurated chancre.

4th. Under the head of active syphilis may be arranged all forms of suppurative syphilis occurring in either glands, chancroids, or suppurative portion of an indurated chancre.

5th. In order to complete the movement of syphilis, these two forms must run their course, or be balanced against the other in the same individual, which is accomplished by the process of syphilization.

6th. The indurated chancre has a period of incubation, as have all so-called secondary lesions; its indurated portion will not be repeated in the successive sores produced by its pus, hence the progeny of the two sores, chancre and chancroid, ultimately become the same.

7th. Many of the cures attributed to drugs are cured by a natural process of syphilization, *i. e.*, suppurating glands. Mercury often changes the form of the syphilitic manifestations from the skin to the bones, and often arrests them by lowering the vitality of the patient, and arresting the natural metamorphosis of tissue.

Idiopathic Bubo, and Secondary Syphilis.

The *Gazette Médicale de Paris*, October 26th, 1867, contains the following conclusions of Dr. Bourguet, of Aix, in regard to idiopathic bubo, and secondary syphilis.

1st. Bubo, for which we can give no cause (*bubon d'emblée*) cannot be explained in the great majority of cases by the simple excitation accompanying coitus.

2d. It should be considered as making part of the array of venereal symptoms, under the same title as indurated chancre, soft chancre, blennorrhagia, balanitis, warts, etc.

3d. Facts most scrupulously noted, will not allow us to doubt that it can, in exceptional cases, be followed by syphilitic constitutional taint.

4th. It would be desirable that statistics bearing on a great number of cases should be carefully prepared, so that the degree of frequency of unaccounted for bubo, and the cases in which it is followed by secondary syphilis, might be established.

Primary Syphilis of the Lips.

Syphilitic affections of the mouth and throat are frequent enough, but very rare are the cases in which the disease commences *primarily* and *exclusively* in the mouth, and especially on the lips, and from this as its starting-point pursues its mischievous wanderings through the system. During a special practice of nearly ten years I have seen but two such cases (both in women, and both sent to me by other physicians). The *Wiener Medizinische Wochenschrift*, Nos. 9 and 10, January 29th, and February 1st, 1868, pp. 137 and 160, has an article on this subject by Professor V. SIGMUND of Vienna, and the London *Lancet* of April 25th, 1868, one by THOMAS BRYANT, Assistant Surgeon to Guy's Hospital, London. Without following Dr. Sigmund in all his statistical statements I will quote from him that primary syphilis of the mouth, especially of the lips, is frightfully, both absolutely and relatively, on the increase in Vienna (and probably not there alone). During the last seven years he has had 73 cases, 32 in his public, and 41 in private practice, having treated 11,792 patients affected with venereal diseases, of whom 5551 had syphilis. Although altogether there are far more male than female syphilitic patients, of these 73 there were but 17 male (6 hospital and 11 private), and 56 female (26 hospital and 30 private) patients. This and other points connected with this subject is of much importance not only medically but socially.

The majority of the persons affected were between 20 and 30 years old. There was one seven months' old infant, one 2 and one 4 years' old girl, one 9 years' boy, one 13 and two 14 years' old girls; also eight girls and one boy between 15 and 20 years, one matron of 57 and two old men of respectively 65 and 71 years. All ranks of society were represented. As to the manner in which the disease was acquired, the patients' statements are of course not to be relied on. Only seventeen could be made to confess extra-genital and labio-genital coitus, and with eleven others this mode of transmission was the highly probable one; two men and eighteen women ascribed their disease to kissing, and this was confirmed in sixteen of these cases by finding the mouths of their partners consequently diseased. As to *mediate* transmission, it is interesting that two glass-blowers and one other mechanic became diseased by using the same blowpipe with a syphilitic fellow-workman, a pupil in music from the bassoon of his teacher, a lady painter from her

teacher who had syphilis of the mouth and had the habit of holding the brush between his lips, etc. The occurrence of some such cases cannot be doubted, but aside from aberrations of sexual intercourse, kissing is undoubtedly the most frequent mode of transmission, and Dr. Sigmund calls attention very earnestly to such transmission from those who have been apparently, and for a long time, already cured of all syphilitic symptoms about the mouth.

The friction of spoon and fork in eating, taking sharp instruments into the mouth, smoking in men, and the common habit of holding pins between the lips with women, etc., may be the causes of abrasions, which contact affects syphilitically.

The primary forms of syphilis affecting the lips, are the same as those of the genito-anal region, viz., induration, papule, and ulcer.

In the course and termination of syphilis when its initial lesion has been one of the lips, there is nothing special. The notion that syphilis runs its course more readily when entering the system by any other than the genito-anal organs, is certainly erroneous. The constitutional phenomena are developed in the usual manner and order of time, except perhaps the more rapid involvement of the mucous membrane of the palate and pharynx.

The treatment is only in so far different as is required by local circumstances. Indurations on the lips are covered with gray plaster (*Empl. sapon, Empl. hydrarg. 3ā p. seq.*) which sticks quite well even to their inner surface and the angles of the mouth, and promotes regression, or, if erosions exist on the indurated tissue, the reformation of epithelium. Indurated ulcers are well cleansed and by means of a fine brush are touched with a solution of nitrate of silver (*gr. x ad aq. dest. f3j*) or with corrosive sublimate (*gr. iij ad alcoh. absoluti f3j*) until granulation occurs, after which the gray plaster is here again in place. In the papular forms, whether simple or confluent, with diphtheritic or purulent exudation, the alcoholic solution of the bichloride is more useful than anything else. To protect the membranes and teeth, especially against lunar caustic, the part touched should at once be touched with fine blotting-paper. Fissures, and especially sores in the angle of the lips, yield to the same treatment, though for finer fissures and abrasions on the lips white precipitate ointment (*gr. vj ad ungt. emollientis vel axung. porcis recent., 3j*) may be used, which quickly restores the epithelium. This is of some importance, if only because such abrasions occasion a great deal of pain and look very badly; but more than that, because the skinning over of excoriated and ulcerated places diminishes the chances of immediate extension of the disease to mouth, pharynx, and tonsils, the syphilitic juices of which may pass into the stomach, and thus into the general circulation, etc.

Proper cleanliness of the mouth must be insisted upon, and if complicated with stomatitis, its cause must be considered; if from the abuse of mercurials, chlorate of potash and preparations of iodine internally, and proper treatment locally, should not an instant be neglected.

Constitutional treatment must be instituted in primary syphilis of the lips either together with or subsequent to local treatment, according to the circumstances of each case. The same indications obtain here as in primary syphilitic lesion on the genitals. Mr. Bryant briefly reports two cases of chancres of the upper lip in single women, aged respectively 21 and 22 years; one of the lower lip in a man aged 30 years; one of the lower lip in a woman, aged 22; and one at the corner of the mouth in a girl of 17 years. In none of these cases could any history be

obtained as to the means by which the lips became inoculated with the disease; in none of the examples in which the chancres occurred in women was there any evidence of any vaginal affection, and in the single male example the penis was clean. He reports also the cases of two boys of seven years each with a chancre on his lower lip, gotten in both instances probably from their syphilitic fathers. Mr. Bryant reports also one case of chancre on the cheek, following a scratch from a man who was suffering from syphilis, and several others of chancre attacking unusual positions.

Treatment of Syphilitic Bubo.

The *Medical Record*, New York, February 15th, 1868, contains an extract from a recent number of the *Lancet*, giving the main points of treatment of syphilitic bubo in the out-patient department of the different London Hospitals. 1st. Rest; 2d. Pressure, if it will be tolerated; 3d. Leeches; 4th. Poultices, when suppuration is inevitable; 5th. A free and early incision to evacuate the contents of the abscess; 6th. A general anti-syphilitic and tonic course.

Treatment of Venereal Affections in Paris.

In the *Nashville Journal of Medicine and Surgery*, February, 1868, p. 368, is a letter from Dr. L. P. YANDELL, Jr., dated Paris, 26th November, 1867. The writer gives a brief outline of the treatment used in the different stages of venereal disease in the hospitals devoted to these affections. These are the Hôpital du Midi, appropriated exclusively for males; the Louvaine, on the other hand, being the hospital for female venereal patients; while the Hôpital St. Louis is the one for cutaneous affections. In a few words the writer alludes to some of the prominent points in the French method of treatment; but says it is his firm conviction that their management of constitutional syphilis is by no means comparable to the American mode of treatment by the process of vapor baths. Mercurial inunctions, by means of mercurial ointment to the front of the leg, covering it with oiled silk, and thus leaving it to become absorbed, is a favorite remedy. Rest and poultices, with an ointment composed of some mercurial, combined with belladonna, is their favorite means of cure in buboes and swelled testicles. Buboes are punctured in the perpendicular manner, as that way seems to favor the contraction of the skin best, which contraction keeps open and drains the abscess to the greatest advantage.

Nitrate of silver is extensively employed in the treatment of chancres of all varieties, followed by dressings of aromatic wine, or aromatic vinegar. As a caustic, if caustic it be at all, it is certainly far inferior to the mineral acids and many other caustics in use with the American profession. Copaiba and cubebs are in general use. The sulphate of zinc and laudanum is a favorite injection in gonorrhœa. Rest and a restricted diet are greatly insisted on.

For the destruction of venereal warts, excision is the operation resorted to. Circumcision is always performed when there is the slightest excuse for it, on the ground that it renders the patient less liable to future accidents. That soft chancres are often followed by constitutional disease, seems to be the general opinion of the profession in Paris. Latter years have reflected but little light upon this obscure subject; facts are few, and they are old.

In the Hôpital St. Louis, M. Bazin says, to speak with strict accuracy, there

are no skin diseases, but only internal disorders expressing themselves through affections of the skin. He divides these affections into four great classes, according to the diatheses out of which they spring, namely: the syphilitic, the scrofulous, the arthritic, the herpetic. M. Bazin maintains that while the march of the scrofulous, arthritic, and herpetic disorders is not so regular as that of syphilis, yet, by careful observation, a regular course may be noted. Any observer of limited experience is familiar with the connected divisions of syphilitic affections. First, the chancre; next, the superficial sores upon the mucous membrane of the throat; then inflammation of the skin, more or less extensive; and finally, diseases of the periosteum of the bones and of the viscera. Scrofula, although irregular, progresses, according to M. Bazin, in the following order: scrofulous erythema in infancy; ophthalmias, affecting the lids especially, with discharges from the ears and nose; cutaneous inflammations in the form of eczema, acne, and lupus, and at last the bones and viscera are assailed. M. Bazin insists that the products of the arthritic family have not features quite so distinct, nevertheless they have an existence. The arthritic, says he, is of full habit, but wanting in healthy color, with a deficiency of general vigor. He is the subject of sore throats, headaches, dry eczema; his hair falls early in life, and finally the viscera suffer, and lunacy may be one of the consequences. The herpetic diathesis is even less clearly defined than the arthritic. Here the subjects are large feeders, spare habit, nervous, quick, and irritable; in childhood they are the subjects of affections of the nervous centres; later in life they suffer from neuralgias. Psoriasis belongs exclusively to this class,—a disease which yields slowly to treatment, and is prone to return; later in life, cancer and lunacy may be developed. M. Bazin makes yet two more classes, one depending on parasites, and the other from external irritants, and from certain articles taken into the stomach. The treatment follows the classification; having first assigned the case to its appropriate class, to prescribe is an easy matter.

IX. DENTAL SURGERY.

Dental Notes.

Toothache from Pulp Exposure.—A particle of cotton, touched in carbolic acid, will, in frequent cases, produce instantaneous relief.

Periodontitis.—A blister back of the neck, and the feet in hot water, will generally control this condition, providing any local source of irritation has been removed. Occasionally, in persons of full habit, a dose of mag. sulph. acts very happily.

Alveolar Abscess.—If the tooth has in it a dead pulp open into the cavity, this will not unfrequently allow the sinus to heal; but if not, inject tinct. iod. dilut. through the opening in the gums, following with a tent thrust as far in as possible.

Osteo-Dental Tumors.—These tumors are easily diagnosed, by observing the condition of the dental arch. One or more teeth proper to the age will be found wanting; or, if the cyst should contain a tooth of the supernumerary class, the introduction of a probe will discover the nature of the contents, by the peculiar and unbone-like feel of the enamel.

A Dental Dam.—Dr. Barnum has devised a most ingenious dam for keeping a

tooth dry during the operation of filling it with gold, the appliance consisting simply in a piece of delicate sheet-rubber, through which a small opening is made, admitting the tooth; this clasps firmly the neck, the saliva being, of course, retained outside. Dentists skilled in the use of the dam say that a tooth by its use can be kept dry for hours, or as long as is ever found necessary. Many votes of thanks have been tendered to Dr. Barnum by different societies.

Bibulous Paper.—No tooth was ever filled perfectly that was not dried, previous to the introduction of the filling, with bibulous paper, or other similar material. Some dentists use very fine old linen, cut into small pieces; nothing better, however, than bibulous paper can be found for the purpose.

Antral Abscess.—Abscesses of the maxillary sinus are in nearly every individual case dependent on diseased tooth-roots, and are most easy of cure, through the extraction of the offending cause. If, however, the discharge should continue after the extraction, the cavity is to be kept patulous, and daily injections made of iodine, glycerine, and tannin. Antral abscesses are simply tooth abscesses, and are treated throughout on this principle. Abscess of the antrum, independent of the teeth, is a most uncommon affection.

Ranula.—It is not enough to simply open the sac and evacuate the contents; a piece must be cut out, and the edges cauterized. The contents of ranula vary with the age, and with the character of the saliva, being sometimes watery, sometimes semi-solid, and not unfrequently calcareous. In the calcareous variety the sac will not unfrequently be found an inch in thickness, making a diagnosis somewhat difficult. In these cases use an exploring needle. Generally but a moderate amount of hemorrhage attends the removal of these calculi.

Granules of Osteo-Dentine.—The formation of granules of secondary dentine in the substance of the pulp is one of the most obscure causes of odontalgia. A diagnosis can only be made differentially. A tooth so afflicted looks perfectly translucent and healthy, and the pain is neuralgic in character. It is exceedingly difficult to destroy with the arsenical paste a pulp so affected; and if the tooth is not in the front of the mouth, no better plan of cure could be adopted than its extraction. Unfortunately these deposits are seldom confined to a single tooth. The dentist discovers these granules by taking the risk of drilling into the pulp-chamber. These granules vary in size from a microscopic point to particles as large as the head of ordinary pins.

Cleft Palate.—After paring the edges, if the parts cannot be brought easily together, make parallel cuts on either side down to the periosteum. No better plan of approximating the edges of the fissure can be adopted than the perforated shot, as employed in vesico-vaginal operations. The steel finger devised by Dr. Garretson carries these shot to their places with ease and accuracy. While held in place by the instrument, the shot are compressed upon the silver threads.

Phosphor Necrosis.—In extensive necrosis from phosphorus no better treatment can be pursued than to wait the loosening process of nature, keeping the parts well cleansed and disinfected. By such waiting a new bone will gradually form about the dead jaw, receiving its mould from it. At a period varying from seven months to a year the sequestrum may be lifted away without the slightest resulting disfigurement. A supporting treatment will always be found necessary during the period. These remarks apply to the inferior jaw. In necrosis of the superior, remove the sequestrum as soon as detached. Keep the resulting cavity filled with any non-irritating material, thus insuring the filling up of the part by granulations.

The Osseo-Cystic Tumor.—The crackling sound, represented in most works on surgery as being so common a diagnostic sign in this class of tumors, is to be received with discrimination. It is certainly not present in more than one out of every twenty cases, and for the reason that such cysts have their walls supported by septi, more or less numerous. These growths are best diagnosed through the aid of the exploring needle, and are successfully treated by crucially incising them, and after breaking up the septi, stuffing with lint saturated with tinct. iodini. The period of obliteration will vary from a week to three months. Simple osseo-cystic tumors of the maxilla are slow of growth, being generally two years in obtaining the size of half a hickory-nut; are entirely painless, and little inclined to degeneracy.

Relations of the First and Second Sets of Teeth.—As a rule, the first teeth are not to be removed until they become loosened in their sockets. Exceptions to this rule exist when the second teeth are erupting to the outer or inner side of the first set. Aching deciduous teeth are to be palliated; or what is still better, the preservation of the first teeth to a proper period should be insured by filling them precisely as practised with the permanent set.

Vulcanite.—No operator (except by an accidental harmony) can make with this material a natural set of teeth. On vulcanite, teeth are set in sections, consequently all have a somewhat common appearance, as if made by one and the same rule. If there is an exception to this, it is where the patient has a long lip, and single teeth can be used. Vulcanite is also porous, and will, in time, become offensive. The introduction of this material has done much to degrade artistic dentistry, and it would really be a most happy thing for the community at large if they would cease to encourage the employment of this base. Vulcanite is poison to some mouths.

Aluminum Plates.—Aluminum, as a base for artificial teeth, has not yet been sufficiently tested to allow of its recommendation. The most perfect sets of teeth, as beauty and healthfulness are concerned, are those made on platinum, and known as the continuous gum-work. In these dentures there are no interstices for the lodgment and decomposition of food, consequently great purity is secured. The teeth being set separately, each case is permitted to be a special study, as an artistic relation is concerned; that is, the denture is made up in the mouth, and the teeth can be manipulated until common harmony with the features is secured. The fusion, finally, of teeth, gums, and plate, makes a continuous piece; and if the dentist is an artist and physiognomist, it is next to impossible to distinguish such sets from the natural organs.

The Six-Year Molar Teeth.—In all the dental journals, marked exceptions are taken to the indiscriminate extractions so common with these teeth; erupting at the sixth year, they are too commonly mistaken for those of the first or milk set, and hence little or no care is given to caries attacking them. It is freely enough admitted that these teeth are apt to be inferior in their organization; but it is given as the best practice to preserve them as long as possible, or at best until the second molar is well in position; in this way is secured the healthiest breadth of the maxillary arch. If such teeth, when first observed, are too much decayed to warrant the expense of gold fillings, tin-foil, gutta-percha, or oxychloride of zinc may be used. Or if nothing better can be done, the pulps may be destroyed and the organs left to decay. The roots can be removed at any period necessary.

Clasps in Artificial Teeth.—Clasps are now almost universally abandoned by

the better class of dentists for the retention of teeth in position. An exception may, however, exist, where but one or two teeth are to be inserted and the natural organs are very dense; but even in these cases great cleanliness and care is necessary. Atmospheric pressure, secured by leaving a space in the centre of a plate, is the principle of retention employed, and can be applied as well to a single tooth as to a full set. Artificial dentures inserted on this principle have, as well, the great advantage of being independent of all neighboring teeth.

Amalgam for Filling Teeth.—If a drop of deliquesced chloride of zinc is triturated with amalgam, and afterwards pressed out with the mercury, it will prevent the discoloration of the material. Since the discovery of this effect of zinc upon amalgam, the use of the material has become much less objectionable. Filling a tooth with amalgam is a most simple matter. It is only first to thoroughly remove all decayed matter by the use of an excavator. Then take of the amalgam, as bought prepared at the dental depots, a quantity deemed sufficient to fill the cavity; with q. s. of mercury mix into a paste, drop in the zinc, and after rubbing for a single moment all together, envelop in cloth or buckskin, and with pliers press out the mercury. The cavity is next to be thoroughly dried with bibulous paper, and the amalgam introduced in its doughy form. An hour or two suffices to harden it.

Plugging Posterior Nares to prevent Hemorrhage in Operations of Mouth, etc.

M. VERNEUIL read, at the Academy of Medicine of Paris, a paper on the means of diminishing the amount of hemorrhage which takes place during operations on the face, tongue, jaws, nasal fossæ, etc. The great obstruction and embarrassment such bleeding produces often cause the surgeon to hasten the steps of the operation too much, while the blood may induce suffocative paroxysms of coughing or vomiting, and other derangements of the digestive organs. The prevention of the flow of blood, by operating while the patient is in the sitting posture, has its inconveniences, for it is fatiguing to the patient and inconvenient to the operator, favors the occurrence of syncope, and prevents the induction of complete anæsthesia. The plan M. Verneuil has found best suited to cope with the difficulty, is to plug the posterior nares as a preliminary step, so as to prevent the flow of blood backward, and in the more complicated operations to attack the deeper-seated parts last. He relates five of his cases as examples of the benefit attendant upon the procedure.

Fractured Jaw; Profuse Hemorrhage stopped by Digital Compression.

W. C——, aged twenty-six, sustained a fracture of the lower jaw, opposite its left angle, by a blow with the fist. The accident happened on September 10th, and on the following morning the patient came to the hospital, bleeding freely from the mouth. The means employed by the house-surgeon were of little avail; and on Mr. Maunder's arrival, the bleeding continuing, the patient was sent to the operating theatre, in case severe measures might be necessary to arrest the hemorrhage. On examination, the blood was seen to rush into the mouth through a fissure in the gum behind the last molar tooth, and the bleeding was at once controlled by compression of the left common carotid artery without discomfort to the patient. At one moment, ligation of the carotid artery seemed inevitable;

but compression being easily borne by the patient, some of the students responded to Mr. Maunder's call for aid (Messrs. Ceeley, Putsey, Barrett, Clouting, Ilott, and Vials), and maintained compression for two hours and a half, with the effect of arresting the bleeding. The patient was kept in his clothes in one position on a sofa for twenty hours, and then sent to his ward. He progressed perfectly satisfactorily, and was made an out-patient on September 27th.—*Lancet*.

Regeneration of the Maxilla Inferior and Teeth.

In relation to this subject Mr. WILLIAM OLIVER CHALK thus writes to the *Lancet*: "In your journal of the 15th ultimo I observe some remarks on the paper I read before the Odontological Society. It is stated that 'the object of the paper was to support a view previously promulgated by Mr. Chalk, but opposed by Mr. Tomes and others, that when redevelopment of the maxilla takes place, as is so frequently seen after the occurrence of necrosis, a new development of teeth is possible.' There are two assertions in this sentence requiring correction. I did not say that redevelopment of the maxilla inferior is '*frequently*' seen after the occurrence of necrosis; but I maintained that, under favorable conditions and a certain mode of treatment in the young subject, the bone could be regenerated, but failing such treatment no regeneration would occur. Again, I did not say 'that a new development of teeth' is possible; but that new teeth *could* be and *were formed* in the new jaw after the entire destruction of the bone itself and of the soft parts connected therewith.

"To occupy your space by any argument on the subject would be simply to repeat the opinion advanced in my paper. I will only add that three of my patients are living; and should any of my professional brethren feel an interest in the matter, I shall have much pleasure in affording them an opportunity of seeing the cases, as well as the preparations and casts, and thereby enable them to form their own opinion upon a matter of the highest practical importance. As regards myself, not a shadow of a doubt rests upon my mind that in the young subject, after the destruction of the maxilla inferior, either by strumous necrosis or caries, which as certainly involves the destruction of the deciduous and permanent teeth, especially in the latter disease, the bone may be regenerated, and new teeth developed.

"It is not denied that a new jaw-bone may be formed, and specimens besides my own exist to prove it. If then the *vis medicatrix nature* extends thus far, is there any valid reason why it should not complete the reparative process by the development of new teeth?"

New Method of Local Anæsthesia, Applicable to the Extraction of Teeth and other Operations in the Cavity of the Mouth.

The following communication by Henoque and E. Fredel to the *Gazette Hebdomadaire*, deserves the fullest attention of surgeons and dentists. It opens a new means for the painless performance of operations in the mouth, without inducing general anæsthesia, or submitting to the numerous inconveniences of Richardson's method when applied to these parts. The attention of the profession having been particularly called to this subject by Magitot's representation of the

disadvantages of local anæsthesia as hitherto applied to operations in the mouth, two physicians of Paris, Henoque and Fredel, inaugurated the attempt to produce the anæsthesia required by the application of the ether spray along the course of the trifacial nerve outside of the mouth. The well-known practice of introducing narcotic substances, chloroform liniments, etc., into the external auditory canal for the purpose of relieving toothache, induced the experimenters to test the value of the anæsthetization of this canal as a means to the painless removal of teeth. Anæsthesia of the meatus auditorius externus was accomplished by the use of ether, with the ordinary atomizing tubes, and the results were as follows :

Of thirty-two individuals who had teeth extracted, twenty-four experienced no pain whatever ; in five cases the extraction was painful, and in three cases the result was doubtful.

Among the cases where the absence of pain was complete were five extractions of upper molars, and one of a canine tooth ; among the painful cases were three upper molars and one lower bicuspid.

It only remains to establish a sure criterion of the full accomplishment of anæsthesia. In the cases reported by Henoque and Fredel, it appeared necessary to continue the application of the ether spray to the external meatus for at least three minutes. These gentlemen believed that the procedure above described is applicable to other operations in the mouth. They have employed it in one case for the removal of the tonsils, and the patient, an intelligent young man, declared that he experienced not the slightest pain. They commend their method to the further trial of the profession.

Seat of Taste.

The *Clinique Européenne* contains the following account of certain experiments made by MM. Klautoch and Stitch, to ascertain the real seat of the sense of taste, which is generally supposed to exist on the whole surface of the tongue, especially the anterior part of that organ, the middle of the dorsum being but feebly endowed with this sense. It seems, from these experiments that the only portion of the tongue which is sensible to taste is a narrow space all around. The breadth of this sensitive zone varies in different subjects ; in some it is not more than two lines ; in others double that breadth. It rarely extends to the inferior surface. The experiments were as follows : A substance having a strong taste is first placed on the centre of the tongue, where it produces no effect. It is then gradually spread out, until the perception of taste is announced ; this occurs generally on the border, but in some individuals it begins at the distance of a line from it. The *velum pendulum* of the palate is also sensible to taste ; but the pharynx and the tonsils are deprived of the gustatory faculty. This is proved by the fact that if they be touched with stick caustic the patient experiences no taste, provided he keep the tongue and the *velum pendulum* away from the spot.

VETERINARY MEDICINE.

Third International Veterinary Congress.

This Congress was held at Zurich, in Switzerland, from the 2d to the 8th of September, 1867. Nearly all the countries on the continent, and also England, were represented, but not America. The previous Congresses were held in 1863 and 1865.

The subjects for discussion were announced to be the rinderpest, pleuro-pneumonia, the proper organization of an inspection of slaughtered animals, veterinary education, and the most fitting organization of veterinary associations. We give a brief sketch of the proceedings from the *Magasin für die Gesamte Thierheilkunde*, for January, 1868.

On the rinderpest, the committee reported that no important new discoveries had been made within the last two years, either in diagnosis or treatment. The increase in temperature of the body, which Sanderson, in England, had observed, was not peculiar to this disease. It had also been satisfactorily shown that it could be communicated to goats, sheep, gazelles, etc. The microscope had failed to give any results in the pathological histology of the disease. The period of incubation was, in the rule, 8 days, though instances of 12, 15, and 18 days had been mentioned. No improvement whatever in the treatment of the disease had been made, and the only resource remains the pole-axe, and absolute segregation. Chlorine and carbolic acid are the best disinfectants; but neither are effective to prevent the disease.

A discussion arose as to the proper disposition of the animals killed. It would appear that in England they are eaten, and no bad results followed. No definite action was taken upon the question.

The debate on the question was closed by the passage of a motion praying the Russian government to inquire into the focus whence the disease spread.

The inspection of slaughtered animals, which came next on the list of questions, recommended itself to all the members; but the practical difficulties in the way of carrying it out were stated with such force that the Congress took no decided action on it.

The discussion on veterinary education led to a general expression of opinion, that steps should be taken to make it more thorough than it now is. There is no reason why the veterinary surgeon should be less acquainted with all branches of science than the regular physician. In England two years of preparatory study are required; in Germany, three, a preliminary examination being held in the latter country.

The Committee on pleuro-pneumonia reported as follows:

1. The appearance of sporadic non-contagious pneumonia among cattle from mechanical influences, is indisputable. It is well marked, and can be clearly diagnosed.
2. Sporadic, non-contagious pneumonia in cattle which does not arise from ob-

vious mechanical influences, can only be diagnosticated from contagious epidemic pneumonia (pleuro-pneumonia) by post-mortem examinations. The latter shows a marbled appearance of the lung; there is a gradual hepatization passing from the red into gray, a more or less clearly marked line of demarcation being observable between them, and a swelling and infiltration of the interlobular connective tissue, caused by yellow lymph and enlarged lymphatics. Cases of pneumonia not exhibiting these characters it is presumable are not contagious.

3. It is recommended that a strict quarantine be observed of suspected herds, that arrangements be made either by insurance or by the general governments to repay herdsmen their losses by this disease, and that inoculation be tried on droves where the disease has once broken out.

One delegate was of opinion that the disease was of late origin and caused by the over stimulation of the lacteal glands. On the Russian steppes where the cows were not constantly milked, it does not occur. It would seem to have originated in Belgium or Holland, where it frequently occurs sporadically, and to have been propagated to the East and to England.

The Congress then adjourned to meet in three years (1870) in Brussels. Professors Defays, Thiernesse, and Wehenkel, all of that city, being appointed as the committee of arrangements.

The Rinderpest.

In an article on the Rinderpest, translated from the German of Dr. WALDS, for the *Western Journal of Medicine* (February, 1868), the writer comes to the following conclusions:

1. The rinderpest is, outside of its original home, nowhere else self-engendering, is, consequently, imported, wherever it makes its appearance.

2. It is incurable.

3. Being so highly infectious, every hour that it is permitted to remain in a locality increases its danger infinitely.

From these well-established points it is self-evident that the danger can be averted from any locality, where the disease shows itself, only by instantly killing not only the diseased animals, but also all those that have been in any contact whatsoever with them.

The successive stages of the disease are as follows:

The first symptoms of the disease are loss of appetite, increased thirst, stopped rumination and symptoms of fear, chills followed by heat.

Milch cows cease of a sudden to give any more milk.

Then follows a short, hoarse coughing, terminating in a short, dull moaning.

The pituitary membranes are inflamed, the eyes turn red and glossy, and a strong diarrhoea, without offensive discharges, sets in. Continued discharges from the nose and of saliva. The animal becomes extremely sensitive of any pressure, especially on its back; the hair stands erect and falls out; eating and ruminating cease altogether. On the third day of the disease all these symptoms are fully developed; the eye lies deep in its socket, the discharges from the nose and the eyes become slimy; the feebleness increases, and the animal shows a restlessness and fear extremely painful, as its plaintive look, anxious listening, hard breathing, and quivering indicate. Death ensues, generally, between the fifth and the seventh day.

The extreme infectiousness of the plague appears from the following facts:

In a country seat in Rees, the plague attacked the cattle (31 head), having been

carried there by workmen, whose clothes had caught the poison on railroad cars, coming there to drink. The servants of a widow Pelmsen had looked at the diseased cattle of a neighbor, and a few days afterward the cattle of Mrs. Pelmsen were attacked by the disease.

The son of a neighboring farmer had several times met with the servants of Mrs. Pelmsen in a tavern, and this was sufficient to infect his father's cattle.

Quarantine Against the Rinderpest.

It is not generally known that ever since 1820 the Russian government has maintained a rigorous quarantine on the Siberian frontier, to prevent the introduction of any diseased cattle from the Kirghis steppes, the supposed focus of the dreaded rinderpest. Recently a commission was appointed to investigate the value of this preventive measure. We translate the abstract of their report, as given in the *Magasin für die Gesammte Thierheilkunde*, for January, 1868.

1. The prevailing epizootic diseases, such as the Siberian pest, rinderpest, pleuro-pneumonia, dysentery, etc., develop themselves primarily both in Siberia, on the Kirghis steppe, and other portions of the empire, therefore no effective quarantine can be instituted against them.

2. Observation has proved that these diseases frequently originate at various points in the empire, when they are entirely unknown on the steppe; and that cattle which leave the steppe healthy are attacked by them after reaching the lowlands. Moreover, they are not marked with the same facility of contagion on the steppe as in the lowlands.

3. In the quarantine stations, hides, horns, wool, and fat, have been detained as fomites. But as in the present position of veterinary science it is impossible to aver that the diseases are ever conveyed by these articles, we regard the detention as useless and annoying to commerce.

4. It is recommended, therefore, that the quarantine stations be done away with.

Hog Cholera.

Professor SALISBURY, of Cleveland, in the *St. Louis Medical Reporter*, for April, 1868, mentions "the remarkable similarity" the hog cholera bears to the chronic diarrhoea of armies. This disease in the West is very fatal. The average loss was from thirty to forty per cent. It even attacks, in certain localities, hogs, and sometimes cattle, that are fed largely and exclusively upon good sound corn. I have made over one hundred careful post-mortem examinations in this disease, and have studied the symptoms in detail before death, and have conducted extended experiments, on a large scale, connected with prophylactic and remedial means, and am perfectly convinced that hog cholera is the same disease in animals as that which is known in the human subject in armies as the chronic diarrhoea.

The same colored passages and kind of diarrhoea, preceded by constipation, with a tendency to fibrinous depositions in the heart (thrombosis), to the clogging up of the pulmonary capillaries with embolia, to tubercular depositions and paralysis, occur in hogs when they are fed too exclusively on the acid and fermenting slops of whiskey distilleries, or on mouldy, sour, or fermenting corn, or even sometimes on good, sound corn, as we find in the chronic diarrhoea of armies. Both diseases are the result of feeding too exclusively upon amylaceous food, or the products of its fermentation.

In hogs the disease begins from the third to the eighth week after they are put exclusively upon this kind of food. If they pass the eighth week without an attack, they begin to thrive and improve rapidly. During the disease the *faeces* are of a pale ash-color and filled with more or less colloid matter and a multitude of torula cells. The follicles in the stomach and large intestines, and especially in the latter, are more or less enlarged and protrude as in chronic diarrhoea.

There is a remarkable tendency to fibrinous depositions in the heart, to tubercular deposits in the lungs, and to the accumulation of emboli in the pulmonary capillaries, resulting in a damming up of the blood, hepatization, and death. Before death the heart always beats spasmodically, which is indicative of fibrinous depositions in its cavities and of the damming up of the blood in the lungs by the accumulation of emboli in the pulmonary capillaries, and of an early fatal result. The body becomes more or less paralyzed—especially is this the case with all the posterior parts of the body and hind legs.

There is evidence of ringing in the ears, from the fact that the animal carries his head tipped to one side, and every few minutes shakes his head. The eyes become affected so that there is always in the latter stage of the disease, more or less blindness. The appetite is always good till the spasmodic or trip-hammer pulsation of the heart begins.

The post-mortems reveal the same conditions and lesions that are found in chronic diarrhoea.

The tendency to this disease varies with the state of the system, the meteorological conditions, and malarious tendency or disposition to the development of low cryptogamic forms; that is—other things being equal—it is more prevalent during those seasons, and periods of the season, when cryptogamic vegetation is the most active, and there is the greatest tendency to fermentative changes.

Those animals that survive and pass the critical period—from the third to the eighth week after full feeding begins—without having the disease, although they thrive and take on fat rapidly, yet their systems are enfeebled and they present many evident symptoms of being in a diseased condition. The skin becomes red and erythematous over the whole body; the hair partially falls; scrofulous sores and swellings frequently appear; they have more or less cough, with paralytic tendencies in the posterior part of the body; their limbs and muscular system become feeble; and any, even very moderate, driving or exercise is apt to produce pulmonary congestions and trip-hammer pulsations of heart, which are followed by sudden death. On post-mortem, the lungs are found hepatized, and the pulmonary capillaries filled with emboli, and the heart with ropes and masses of fibrin, and in the same condition, so far as the lungs and heart are concerned, as when the animals die of hog cholera.

The products of the fermentation of amylaceous matters—such as sugar, alcoholic beverages, carbonic acid and vinegar—when too excessively and exclusively used, have a tendency to produce derangements similar to those which result from the too exclusive use of starchy food.

These investigations throw valuable light upon the summer bowel complaints of children, especially those where the stools are gelatinous and green, and contain colloid matter. There is no doubt but that all these abnormal states arise from the too exclusive use of fruits, and starchy and saccharine substances, which children are largely indulged in.

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